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ABSTRACT

A Car Passenger Safety Curriculum was developed for Grades K-6 and pilot tested in 10 elementary schools. Five schools served as treatment schools, five as comparison schools. The curriculum included materials at K-1, 2-3, and 4-6 grade levels. Observations were made of belt usage by students, and knowledge tests were administered to students before the curriculum materials were used. Workshops were conducted with teachers at the five treatment schools to familiarize them with the importance and effectiveness of safety belt use and with the curriculum materials. After the curriculum materials were introduced, knowledge tests were administered and observations of seat belt use were again made. In addition, principals and teachers at the treatment schools completed questionnaires to provide information on administrative and teaching feasibility of the curriculum. The knowledge tests provided mixed results. Observational data showed significant increases in use by children at the treatment schools where the net gain was almost two and one half times that in the comparison schools. However, the absolute level of belt use was very low, starting at 3 percent and increasing in the treatment group to 14 percent. It must be recognized that educational efforts alone are insufficient and that other low cost, effective strategies are available for increasing seat belt use. Questionnaires and related materials as well as commercial data and personal comments are appended. (RH)

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CHILD PASSENGER SAFETY:

A PILOT TEST OF A K-6 CURRICULUM

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TABLE OF CONTENTS

	Page
LIST OF TABLES	
LIST OF FIGURES	
LIST OF APPENDICES	
INTRODUCTION	1
REVIEW OF LITERATURE AND AVAILABLE MATERIALS ON TECHNIQUES TO PROMOTE SAFETY BELT USAGE	4
DEVELOPMENT OF NEW CURRICULUM	5
Additions and Revisions for Grades K-1	6
Additions and Revisions for Grades 2-3	9
Additions and Revisions for Grades 4-6	11
SELECTION OF SCHOOL SYSTEM FOR PILOT TESTING	13
DEVELOPMENT OF EVALUATION PLAN	15
CONDUCT OF TEACHER WORKSHOPS	18
ADMINISTRATIVE AND TEACHING FEASIBILITY	19
Principals	21
Teachers	23
Level K-1	23
Level 2-3	24
Level 4-6	25
Summary	26
ASSESSMENT OF KNOWLEDGE CHANGE	26
Development of Knowledge Tests	27
Administration of Knowledge Tests	28
Analyses	29
Results	31
OBSERVED SAFETY BELT USAGE	35
Data Collection Procedures	35
Observer Reliability	37
Description of Sample	38
Analyses of Pre-curriculum Data	38
Analyses of Post-curriculum Data	39
Analyses of Net Gain in Belt Usage Rates	40
Relationship Between Driver's Belt Usage and Other Variables	41
Summary	42

RECOMMENDATIONS 42
SUMMARY AND CONCLUSIONS 44
REFERENCES 47

LIST OF TABLES

Page

Table 1. 1982 North Carolina Accident Data for Passengers.... 2

Table 2. Overall Test Changes by Group, School and Grade..... 51

Table 3. Test Scores for Third Grade by Group and Schools.... 52

Table 4. Test Scores for Third Grade by Group and Tests..... 53

Table 5. Test Scores for Fifth Grade by Group and Schools.... 54

Table 6. Test Scores for Fifth Grade by Group and Tests..... 55

Table 7. Description of Behavioral Observations..... 56

Table 8. Analyses of Comparison and Treatment Schools -Session I..... 57

Table 9. Analyses by Race - Session I..... 58

Table 10. Analyses of Comparison and Treatment School -Session II..... 59

Table 11. Analyses by Race - Session II..... 60

Table 12. Generalized Chi Square Analysis of Categorical Data - Student's Belt Usage..... 61

Table 13. Generalized Chi Square Analysis of Categorical Data - Driver's Belt Usage..... 62

Table 14. Driver's Belt Usage by Student's Belt Usage..... 63

Table 15. Driver's Belt Usage by Vehicle Crowding..... 64

LIST OF FIGURES

Page

Figure 1. Third Grade Mean Change Scores (Complete Test) by Test Form and Group..... 67

Figure 2. Third Grade Mean Change Scores (Curriculum Subtest) by Test Form and Group..... 68

Figure 3. Third Grade Mean Change Scores (Non-curriculum Subtest) by Test Form and Group 69

Figure 4. Third Grade Mean Change Scores (Complete Test) by School and Group.....70

Figure 5. Third Grade Mean Change Scores (Curriculum Subtest) by School and Group.....71

Figure 6. Third Grade Mean Change Scores (Non-curriculum Subtest) by School and Group.....72

Figure 7. Fifth Grade Mean Change Scores (Complete Test) by Test Form and Group 73

Figure 8. Fifth Grade Mean Change Scores (Curriculum Subtest) by Test Form and Group 74

Figure 9. Fifth Grade Mean Change Scores (Non-curriculum Subtest) by Test Form and Group 75

Figure 10. Fifth Grade Mean Change Scores (Complete Test) by School and Group 76

Figure 11. Fifth Grade Mean Change Scores (Curriculum Subtest) by School and Group 77

Figure 12. Fifth Grade Mean Change Scores (Non-curriculum Subtest) by School and Group 78

LIST OF APPENDICES

Page

Appendix A
Questionnaire to Schools Concerning Student Characteristics 79

Appendix B
Questiionnaire to Principals Concerning the Curriculum 83

Appendix C
Questionnaire to Teachers Concerning the Curriculum 87

Appendix D
Results of Principal's Questionnaire 111

Appendix E
Results of Teacher's (K-1) Questionnaire 115

Appendix F
Comments From Kindergarten and First Grade 123

Appendix G
Results of Teacher's (2-3) Questionnaire 125

Appendix H
Comments From Second and Third Grades 133

Appendix I
Results of Teacher's (4-6) Questionnaire 135

Appendix J
Comments From Fourth Through Sixth Grades 147

Appendix K
Knowledge Test Forms 149

Appendix L
Coding Form and Rules for Seat Belt Observations 211

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EXECUTIVE SUMMARY

A Car Passenger Safety Curriculum was developed for Grades K-6 and pilot tested in an elementery school system. The curriculum included materials at three levels, namely, K-1, 2-3, and 4-6. Many of the activities could be incorporated into subject matter being taught, while other activities could be taught as separate units.

Ten elementary schools were included in the study, with five serving as treatment schools and the other five as comparison schools. Prior to the implementation of any curriculum materials, observations were made at all ten school of actual belt usage of children being driven to school. Workshops were conducted with teachers at the five treatment schools to familiarize them with the importance and effectiveness of safety belt usage and with the curriculum materials. After the workshops were conducted, but before any materials were taught, knowledge tests were administered to third and fifth grade students in the treatment schools. Tests were also administered at the comparison schools shortly afterward. Following the use of the curriculum materials in the treatment schools, knowledge tests were again administered at all ten schools. Also, following the use of the curriculum, belt usage observations were repeated at all ten schools. In addition, principals and teachers at the treatment schools completed questionnaires to provide information on administrative and teaching feasibility of the curriculum.

Both principals and teachers generally found the curriculum worthwhile. Some of the materials for grades 4-6 were

considered too easy for many of the students and probably need to be revised accordingly. Teachers varied in their reactions to some of the activities, with certain activities chosen as both the most useful and the least useful by different teachers. Generally, all teachers expressed a need for more audiovisual materials.

A portable car seat, complete with safety belt, that had been made available for "Hands On" experience by children was found to be helpful at the lower grades but not particularly so at the upper ones.

The knowledge tests provided mixed results. Generally, at the third grade level the treatment group scored higher on the tests than the comparison group, but at the fifth grade level the exact opposite was the case. Furthermore, there was considerable variation among schools and subtopics. Hence, it is very difficult to arrive at meaningful interpretations of the knowledge test data.

The observations of actual belt usage showed significantly greater increases in usage by children at the treatment schools. Although both treatment and comparison groups increased their usage, the net gain at the treatment schools was almost two and a half times that in the comparison schools. Furthermore, the treatment group showed higher rates of belt usage for drivers, as well as a lower incidence of "crowding" (children in nonconventional seat positions, such as between bucket seats or in the cargo area of stations wagon).

The curriculum appeared to be differentially beneficial for white students, with nonwhite children showing no apparent

effect.

It should be noted that the Car Passenger Safety Curriculum is designed to continue throughout the elementary school years. The evaluation conducted was based on a single year's experience, so that any effects observed should be considered minimal. Presumably the child in kindergarten would be re-exposed to curriculum information in first grade and again in second, and so on. Hence, just as is true for other materials taught (e.g., arithmetic, spelling), the cumulative effects should be expected to result in greater learning.

While it may be concluded that the use of the Car passenger Safety Curriculum was associated with highly significant increases in observed belt usage, it should also be noted that the absolute belt usage was very low (14%, up from 3% prior to the curriculum for the treatment group). It is of some importance to recognize that in countries where belt usage is mandatory, major increases are observed overnight. In the United Kingdom a law requiring safety belt usage was implemented at the end of January, 1983. Subsequent studies of observed usage report usage rates in excess of 90 percent. Clearly if the health and safety of children is seriously considered important, it must be recognized that there are readily available low cost strategies for obtaining much greater increases in usage than can be expected in the foreseeable future solely through educational efforts.

Introduction

For school age children, motor vehicle injuries are by far the leading cause of death and injury (National Safety Council, 1982). A great number of these deaths could be averted through the use of safety belts. Independent studies conducted in different states, as well as in many foreign countries, have repeatedly documented the effectiveness of safety belts in reducing injuries sustained by vehicle occupants. Estimates of reductions in fatal injuries run as high as 80 percent.

In recent years there has been an increasing awareness of the importance of occupant restraints for transporting infants and children, and as of this writing, in the United States at least 40 states and the District of Columbia have enacted legislation mandating the use of child restraint systems for these very young passengers. However, only two of these jurisdictions require usage through age five, and most extend the requirements only through age three.

Three states are seriously considering extending mandated restraint usage to older children and/or adults. However, at this time no state requires that elementary school age children use available safety belts. Consequently there is no required protection from the leading threat to these children's lives.

Nationwide, safety belt usage remains low, with observed usage usually no higher than 15 percent. The usage is even lower among passengers, as indicated by the 1982 crash data from North Carolina, shown in Table 1.

Table 1. 1982 North Carolina Accident Data for Passengers (Non-Drivers)

Age	Belts Used	No Belts Used
0-5	2,094 (18.28%)	9,361 (81.72%)
6-14	996 (5.52%)	17,044 (94.48%)
15-17	513 (3.58%)	13,833 (96.42%)
18-21	679 (3.71%)	17,639 (96.29%)
22-50	2,269 (6.48%)	32,773 (93.52%)
51-65	594 (8.10%)	6,742 (91.90%)
66+	354 (7.59%)	4,312 (92.41%)

It can be seen that, with the exception of the ages 0 through 5 group, younger passengers are less likely to be wearing belts than are adult passengers. In 1982 North Carolina implemented legislation requiring passenger restraint systems for children under the age of two. The publicity and educational programs preceding and surrounding this legislation probably contributed to the somewhat higher rates of occupant restraint usage observed for the youngest group. However, less than six percent of crash-involved children ages 6 through 14 were wearing belts. Clearly this age group constitutes a prime target for efforts aimed at increasing occupant protection.

This project focused on elementary school children for the following reasons. First, there are already ongoing programs in the State to promote greater use of child restraints for infants and preschool children. Furthermore, there are efforts to emphasize the importance of safety belt usage to students taking driver education at the high school level. However, besides the K-6 Car Passenger

Safety Program developed through the Governor's Highway Safety Program in 1975 as part of a K-9 Traffic Safety Curriculum, there has not been a systematic effort to encourage safety belt usage for this age group.

Second, elementary school children constitute a particularly receptive group because they are at a stage where they are forming their own habits. Until they start school, children are more readily influenced by their parents. However, in the elementary years they begin to think more for themselves and formulate their own opinions and values. Furthermore, they have not yet reached the age where peer pressures become the overriding influence. If safety belt usage is acquired as a habit at this stage in life, it is likely to continue and contribute to the child's safety in later years.

Third, research on smoking behavior and on child restraints has shown that children can be effective in modifying the behavior of their parents. Thus, although the program that was developed and implemented was targeted primarily at elementary school children, there is the potential for secondary benefits in terms of influencing parents and younger siblings.

This project focused on increasing safety belt usage by elementary school children. The project built on information and materials developed for the State previously, as well as other information and materials that have since become available. In addition, new activities and ideas were incorporated prior to implementation.

The project included the following tasks:

1. Review literature on techniques to promote safety belt usage.

2. Combine and compile for use by teachers most appropriate materials from literature review.

3. Select a school system for pilot testing.

4. Develop evaluation plan.

5. Collect baseline observations of safety belt usage from school children.

6. Conduct workshops for teachers in treatment schools.

7. Administer pre-treatment knowledge tests in treatment and comparison schools.

8. Implement curriculum in treatment schools.

9. Administer post-treatment knowledge tests in treatment and comparison schools.

10. Collect data from teachers in treatment schools on use of curriculum materials.

11. Collect data from principals in treatment schools on administration of curriculum.

12. Analyze data sets.

13. Revise curriculum materials and make recommendations for implementation statewide.

Although the order of tasks shown above is more or less chronological, we will depart from this order in describing the activities whenever it appears more logical to do so.

Review of Literature and Available Materials on Techniques to Promote Safety Belt Usage

A search of the highway safety literature Transportation Research Information Services (TRIS) was conducted to identify studies that addressed the issue of safety belt usage for elementary school children. Specifically, the search was

conducted using the following key phrases: school/elementary/ education/curriculum and safety belt/seat belt/belt and child/children/ passenger. About a dozen studies were identified from this literature search. A review of these studies produced only limited information that is specifically relevant to an elementary school curriculum on safety belts.

In addition, inquiries were made to NHTSA, the state of Michigan (that was known to have been involved in efforts to increase restraint system usage for all ages, but particularly children), and the National Academy of Pediatrics. These efforts resulted in the identification of a number of films and other materials, all of which were reviewed.

Development of New Curriculum

The Child Passenger Safety component of the K-9 Traffic Safety curriculum, developed for North Carolina in 1975, was used as a point of departure. On the basis of the literature reviewed and the materials and other information obtained concerning safety belts, a number of modifications and additions were made to the earlier curriculum. The new version retained the three major levels of difficulty, namely, Level A for grades K-1, Level B for grades 2-3, and Level C for grades 4-6. It was recognized that even within the same school system there may be differences from one school to another in the actual functioning levels of children at the same grade level. Therefore, for Level C materials an effort was made to include some activities that went beyond the average sixth grade level but which would be useful in those situations in which a sixth grade class is accelerated. Some of the activities included in the curriculum

will stand alone, while others are designed so that they can readily be incorporated into the materials already being taught in math, language arts, social studies, and so forth.

Modifications made to the old curriculum for purposes of the pilot test are listed below by grade level.

Additions and Revisions for Grades K-1

1. A new introduction to the curriculuIm was written. In this new introduction, motor vehicle injuries were viewed as a major public health problem. It is pointed out that they are the second most costly health problem in the United States today and the leading cause of death from six months to about 40 years of age. Information on the effectiveness of safety belts, together with the facts and myths concerning safety belt usage, were also provided to teachers in this new introduction to encourage them to use the curriculum materials with their students.

2. The section on shoulder harnesses was revised. For most children in the elementary grade level, use of the shoulder harness is not recommended because of their shorter stature. In many cases, the shoulder harness strikes them at the neck or face instead of across the chest. Thus, for these children, the best thing to do is either to sit in the back seat and wear a lap belt, or, if in the front seat, to put the shoulder harness behind the back (a new photograph depicting the proper position of the shoulder harness for the young children is included here).

3. A new activity, "Testing Safety Belts," is used in place of two old activities, "Inertia Experiment" and "Safety

Belts vs No Safety Belts" to demonstrate the ride down benefits of safety belts. This new activity was adapted from the one included in the Safety Belt Activity Book , developed by the National Highway Traffic Safety Administration (NHTSA). The activity provides detailed instructions for making a car using plywood, empty thread spools, nails, cardboard, and a styrofoam cup. A raw egg is used as a "passenger." Rubber bands or masking tape serve as a safety belt. Once the car is made, the children can test the concept of restraint systems by running the car down a ramp into a wall or other hard barrier, first with the "belt", and then without the "belt". The teacher instructs the students to observe what happens to the "person" during the two test runs. At the end, students are asked to draw conclusions about the effectiveness of safety belts.

It should be noted that the instructions in the NHTSA booklet had to be modified. Our original car, constructed following the instructions closely, failed to roll properly. We found that adding washers to both ends of each "wheel" (made from the empty thread spools) resulted in cars that rolled freely. Also, we found that masking tape was much superior to rubber bands for restraining the egg. Occasionally, the rubber bands would slip and allow the egg to roll forward. These modified instructions were not incorporated into the printed materials supplied to the teachers, but they were explained to the teachers in the workshops.

4. To provide students with "Hands On" experience with the use of safety belts, a seat with a securely anchored shoulder and lap belt system was made available to the treatment schools.

By using this seat, teachers could demonstrate the proper placement of belts for adults as well as for children. Each child could be given an opportunity to practice fastening the belt, positioning it properly on himself or herself and unfastening the belt. During this exercise, teachers were to stress the importance of <u>each child</u> determining the proper position of the lap and shoulder belts.

5. To follow up on the above activity, children were to check the seat belts in their family cars. They were to check both front and back seats, and to determine whether a shoulder harness should be used.

6. "Fasten Safety Belt" was included into the activity for "Proper Sequence of Events for Getting Ready to Ride in a Car." Illustrations depicting each step in the sequence accompany the text.

7. New songs, taken from the NHTSA's <u>Safety Belt Activity Book,</u> were added.

8. Another activity encourages students to write poems, short stories or articles using safety belts as themes. The purpose of the writing is to convince other students in their own age group to wear safety belts. Therefore it is important to incorporate as many safety belt facts as they can into their poems and stories. The poems and stories could be posted on bulletin boards or published in the school newspaper or magazine for others to read.

9. Students can make a safety belt brochure and take it home to their parents. Detailed instructions on how to make this brochure are included in the curriculum. Mainly, students

design and color the brochure cover and write or copy a message asking their parents to wear safety belts. Also, included in this brochure is some information about special child safety seats which the students could copy onto the back of their brochures. The purpose of this activity is to encourage the parents to use safety belts for themselves and their families.

10. The following films and commercial spots were made available for showing to students (and possibly parents as well):

Egg, Pumpkin, and Headache

Children and Infants in Car Crashes

Dynamics of a Crash

Child Restraints

Additions and Revisions for Grades 2-3

1. The same new introduction (Motor Vehicle Injuries: A Major Public Health Problem) used for grades K-1 is being used for grades 2-3

2. A new activity, "Testing Safety Belts," is used in place of the old activity of "Making a Car". A description of this new activity is provided in the previous section for grades K-1.

3. "Fastening Safety Belt" was included into the sequence of events for getting ready to ride in a car.

4. Students can be asked to start a collection of pictures from magazines and newspapers showing people in cars. Have them observe how many pictures show people wearing safety belts and how many do not. Ask them to name the types of safety belts they see in the pictures. A collage displaying the various

pictures collected could later be posted around the different school areas.

5. A basic background mural taken from the NHTSA Safety Belt Activity Book is provided to be used in conjunction with this discussion activity. Students could color the mural as well as add people, cars, trucks, animals, traffic lights and signals to it. Have students look at the mural and identify potential quick stop hazards (e.g. intersection, fire station, construction zone, cattle crossing, open manhole cover, large puddle) they see in the mural. In addition, ask students to use their imaginations to think of other hazardous situations where cars might need to stop quickly. The hazardous situations identified could be marked with a large symbol on the mural.

6. Students could make tags to be hung in the family car to remind family members to wear their safety belts. These tags could be made from construction paper and decorated with safety belt pictures or slogans.

7. A discussion on safety restraints for small children could be held. The information for this activity was updated to provide the latest knowledge concerning child safety seats and restraints. New pictures showing the proper use of infant carriers, child restraints, booster seats, and lap and shoulder belts for younger children are also provided.

8. A Read Aloud Story, "Amy's Big Sister," could be used in a class presentation for discussion of safety belt usage. This story was taken from the NHTSA Safety Belt Activity Book .

9. The activity of making a safety belt brochure could be used for the second and third graders as well. This activity

was described previously under the revisions for the kindergarten and first grade.

10. Students (and their parents) could be shown films and commercial spots on safety belts (see previous audiovisual list).

Additions and Revisions for Grades 4-6

1. The same new introduction (Motor Vehicle Injuries: A Public Health Problem) is used in the upper elementary grades as well.

2. As before, the information on shoulder harness was revised.

3. A "Hands On" activity similar to that used in the earlier grades could also be used for these grades. The specially adapted car seat with an attached lap belt and shoulder belt could be used by teachers and by each student in order for them to determine the proper positioning of the lap and shoulder belts.

4. Students could conduct a survey about safety belt usage among their friends or neighbors. They are to find out which groups (old or young, male or female, etc.) wear belts more often, and the reasons why people wear or do not wear safety belts. The teacher could provide assistance and the necessary materials such as survey interview forms for students to carry out the survey. When the students have completed all their interviews, have them fill in the results on a survey chart (See NHTSA Safety Belt Activity Book). After all the information has been organized on the chart, ask students to draw some conclusions from it. To finish up this activity, have teachers

guide the students in writing a survey report.

5. Students could ask a safety authority (police officer, pediatrician) from the community to come talk to the class about safty belts. The teacher could prepare the students before the visit, discussing with the students some questions they may want to ask the visitor about safety belts. A list of resource persons could be provided to the teachers for them to schedule their visits to the schools.

6. Students could write letters suggesting action that influential individuals or organizations could take to increase safety belt usage. Students could think of appropriate actions for various organizations and include them in their letters. A sample letter could be obtained from the NHTSA Safety Belt Activity Book . This activity could be incorporated into other lessons such as social studies.

7. Students could plan a program about safety belts to present to the school's PTA or some other functions attended by parents. This could be in the form of a debate or skit on pro's and con's of safety belts. End the program with a slide presentation on Safety Belts, Fact and Fiction .

8. A discussion activity on "Responsibility for Others" could be used successfully with fifth and sixth graders. This activity is primarily designed to get the children thinking about how motor vehicle injuries affect both the individual and the society. In the discussion, motor vehicle injuries are presented as a major epidemic that is maiming and killing people. Students could also be told that there is an effective preventive treatment that would make a big difference, and then

open the discussion to the students to seek their views on whether people should be required to take the treatment. Teachers can help students to express their own views on this important issue and help them think it through. A detailed format for this discussion activity is included in the curriculum.

10. Students could calculate travel distance and time or gasoline usage and time. The calculations could be done with both metric and nonmetric systems. A metric conversion table is provided as a study guide for this activity.

11. Students (and their parents) could be shown films and commercial spots on safety belts (See previous audiovisual list).

Selection of school system for pilot testing

To identify an appropriate school system, the 1980 North Carolina crash file was analyzed by county to determine, first, the number of crashes within each county in which there were passenger car occupants ages 5 through 12 and, second, the total number of such occupants involved in crashes. In addition, the number of elementary schools within each county was checked to identify those school systems with a sufficient number of schools to comprise treatment and comparison groups. Additional analyses were run for those counties with the largest number of elementary schools. These further analyses examined belt usage by race and sex and belt usage by injury level. In every instance 95 percent or more of the crash-involved occupants ages 5 through 12 were unrestrained. Between 14 percent and 20 percent of these children experienced some injury in the crash.

Thus it appeared that there was ample room for improvement in the belt usage rates for children in the counties examined.

On the basis of the preliminary analyses it appeared that there were four school systems that offered a sufficient number of schools and children to allow for a pilot study. However, because of other considerations, such as major changes occurring in the system (e.g., redistricting of schools, a new superintendent, major curriculum changes, etc.), the Wake county school system was the one selected for further analyses.

Inquiry was made to request the cooperation and participation of the school officials in conducting this project. Twenty schools were identified as candidates to be included in the study. Among these 20 schools, ten already had other special programs being introduced and could be considered only as candidates for the comparison group. (The special programs had nothing to do with safety belts. As a result the situation provided some control for the "Hawthorne effect", that is, the effect of being singled out for special consideration of any type.)

A questionnaire was sent to all 20 candidate schools requesting information on number of students enrolled in the school, proportion of students riding the bus (since belt usage observations could not be obtained from these students), proportion of students walking to school (again precluding real world observations of belt usage), proportion of nonwhite students, and opening and closing times of the schools (See Appendix A).

In addition, site visits were made to 17 schools in order

to introduce the data collection staff to the school officials and to obtain more detailed information regarding the times and locations at which children were dropped off in the mornings.

On the basis of all this information, ten schools were finally selected for inclusion in the study, five each for the treatment and comparison groups. Ideally, the ten schools with no special programs already under way would have been assigned randomly to treatment and comparison groups. However, some of these schools had too few students being driven to school. The final selection was based on the schools having a sufficient number of students being driven to school. This criterion was important because the project required that actual belt usage rates be determined prior to and following the use of the curriculum materials. In addition, the final selection of schools provided approximate equality on other criteria such as total number of students and proportion of nonwhite students. In addition, all five treatment schools indicated an ability to implement the program.

Letters were sent to all 20 schools to inform them of their status in the final selection.

Development of Evaluation Plan

The final evaluation plan consisted of three major parts. The first concerned administrative and teaching feasibility, the second, knowledge gained by the students, and, finally, modification of observed safety belt usage. Theoretically a fourth type of evaluation was possible, namely, modification of belt usage in crashes and injury reduction in crashes. However,

because the project was scheduled to terminate at the end of the second year, it was not possible to conduct an evaluation based on crash data. The first year of the project focused on developing the curriculum and training teachers in its use, and the second year focused on implementation of the curriculum materials. Since any impact of the curriculum would be manifested in crashes occurring after curriculum implementation, it would have been necessary to analyze crash data from 1983 to observe any effects. However, these data would not be available for analysis until well into 1984, after the project had terminated. Hence the project was not able to examine what might be considered the most important criterion of all.

Administrative and teaching feasibility concerned the ease with which the program was implemented, including the teacher workshops and the teaching of the materials in the classroom. Questionnaires were distributed to both teachers and principals in the treatment schools to obtain information on their perceptions of the implementation process. In addition, the teacher questionnaires requested information on the extent to which various portions of the curriculum materials were actually used. Presumably, those materials that are used more frequently are seen as easier to implement and/or more useful. Also, this information provided data on the extent to which the curriculum materials were actually taught. If most of the materials in a curriculum are not used, then they cannot be expected to have an effect on belt wearing behavior. On the other hand, if the materials are used and there is no observable change in belt wearing behavior, other approaches must be sought. Information

was also collected from the principals of the treatment schools to determine their views on how easily the workshops and eventual teaching of the materials were incorporated into the school program.

Knowledge gain was determined from knowledge tests concerning safety belt usage and its effectiveness (as well as other highway safety information). Questionnaires were administered to third and fifth grade children in both treatment and comparison schools both prior to and following the use of the curriculum in the treatment schools. Changes in knowledge for children in the comparison schools allowed for measuring effects of any background variables. As it turned out, during the implementation of this curriculum there was considerable publicity and emphasis on child restraint usage for infants and young children, and some of this publicity probably had an effect on others as well. The comparison schools were essential for controlling for these effects.

Safety belt usage was determined by observations of actual belt usage by children being chauffeured to and from school both prior to and following the curriculum implementation. These observations were made at both treatment and comparison schools to control for any changes occurring in belt wearing usage in the general population. Information was also collected on belt usage by the driver so that it might be determined whether children's usage affected drivers' behavior.

It was recognized that the belt usage observations made in the school area would not include a representative population, since these were children who were driven to school. A very

significant population was omitted from these observations, namely, children who ride the school buses. Thus there were undoubtedly rural-urban differences between those children observed and those not observed. There may also have been socioeconomic and other differences as well. However, observations obtained at the comparison schools were based on the same type of population as those obtained at the treatment schools. Therefore any differences found that are associated with the use of the curriculum should be valid, even if it may not be possible to generalize them to all children.

Conduct of Teacher Workshops

Separate workshops were conducted in each of the five treatment schools. Workshops were conducted either on teacher workdays or immediately following dismissal of students at the end of the school day. Each workshop was conducted by the same two persons and lasted approximately one hour. Initially a representative of the N.C. Department of Public Instruction provided a brief overview of the project, including its background and source of funding support. The representative from the UNC Highway Safety Research Center then provided a comprehensive background on the importance of motor vehicle injuries as a major public health and economic problem, the fact that motor vehicle injuries are by far the leading cause of death and serious injury among elementary school age children, the effectiveness of safety belt usage and the role of teachers in communicating important information. The background and development of the curriculum materials were explained, and examples were given of how specific activities could be

incorporated into the different academic subject areas. Some explanation was also given of how the project would be evaluated and what cooperation would be asked from the teachers in obtaining the necessary evaluation information. Finally, the demonstration of the car and egg was shown, as well as some of the film materials. Questions were entertained throughout the workshop. The primary emphasis throughout the workshop was on the importance of the teacher's role in helping to combat a major health problem for children.

For three schools the workshops were conducted shortly after the beginning of the school year. In a fourth school the workshop was conducted on Veterans Day in November. For the fifth school the workshop was not held until January because the school had become a magnet school and required some time for things to settle down. In this latter school the curriculum was not implemented until the spring semester.

Schools also varied in how they handled the curriculum. In some schools the materials were covered in a matter of weeks. In others they were spread throughout the semester or school year. In all instances the schools had supposedly completed the curriculum before post-curriculum measures were made.

Administrative and Teaching Feasibility

Questionnaires were developed to obtain information from principals and teachers concerning the ease with which the curriculum was incorporated into the school process. Principals were queried concerning the incorporation of the Car Passenger Safety Program into the regular school program; teachers' enthusiasm about the new curriculum; the need for teacher

training; and administrative problems, changes or suggestions concerning the Car Passenger Program (see Appendix B).

Three different questionnaires were developed, one each for use by teachers at each of the three grade levels, namely K-1, 2-3, and 4-6 (see Appendix C). All teachers receiving questionnaires were asked to make an overall critique of the K-6 Car Passenger Safety Curriculum, including extent of use, manner of use, and ease of use. In addition, they were asked to evaluate the appropriateness for their grade levels of each concept, e.g., Entry and Exiting, Importance of Wearing Safety Belts. For each concept, questions were asked concerning actual use, concept's value to the curriculum, appropriateness of concept's difficulty level, students' response to the concept, the most helpful and the least helpful parts of the concept materials, and, finally, their suggestions concerning the concept materials.

Upon completion of the teaching of the curriculum, Department of Public Instruction (DPI) project staff personally delivered principal and teacher questionnaires to the principals at each of the five treatment schools. The principals were requested to complete and return their own questionnaires and to distribute the teacher questionnaires to all teachers in their schools. Each questionnaire was accompanied by a cover letter explaining the use of the questionnaire and requesting the cooperation of the recipient. Teacher questionnaires were clearly identified for each of the three curriculum levels (K-1, 2-3, and 4-6) to ensure their proper distribution. However, seven teachers completed qestionnaires that were designed for a

curriculum level other than the one at which they were teaching. These questionnaires were included in the computation for response rates, but only the relevant portions were tabulated in the results.

Both principal and teacher data from one treatment school were misplaced and could not be delivered to HSRC for analysis. For the remaining schools, only three principal questionnaires and 65 questionnaires from teachers were received by the Highway Safety Research Center (HSRC) for analysis. These figures represent a 60 percent return rate for principals and an 87 percent return rate for teachers.

Of the 65 teacher questionnaires received, five could not be used because they were returned blank with notes indicating that the recipients had not used any part of the curriculum. Thus, the results summarized below are based on returns from three principals and 60 teachers, including the seven teachers who completed the wrong questionnaires.

Principals . All three principals felt that the K-6 Car Passenger Safety Curriculum should be incorporated as a permanent part of the school curriculum for all three grade levels (Appendix D). They viewed the teachers as having quite a bit of enthusiasm after several weeks of use. In-service teacher training was considered necessary by two principals because they thought the training would help teachers feel more comfortable about teaching the new materials, especially when statistical data are involved. One principal reported an administrative problem in that the curriculum was being implemented at a time when the school was involved in many other

special programs. However, he added that the curriculum would not pose an administrative problem if teachers were given the entire school year to integrate the curriculum materials into their teaching. Generally, the overall response to the curriculum by the principals was mixed, as indicated by their comments to question #10:

"Materials provided are of good quality, well researched, easy to use resources for teachers. By offering the program in early grades, greater effect on attitudes is likely. Teachers are 'pressed' to teach drug education...all needed but time consuming...."

"A timely good protective program for children who ride passenger cars as well as the school bus."

"There were some older guides that had much valuable information that were housed here at school. Would have been educationally efficient to have used those resources systemwide (some of our teachers did)."

The principal who supplied the latter comment told the DPI project staff that as a result of the new Car Passenger Safety program at his school, he has committed himself to buckle up when he drives. Before, he did not always wear the belt. He felt that if the school were going to teach wearing safety belts, he ought to be setting an example.

Based on the above results, it was concluded that principals at these particular treatment schools viewed the K-6 Car Passenger Safety Program quite positively, and at the same time provided some useful suggestions for improving its implementation at their schools.

Teachers . Teachers' reactions to the curriculum are summarized according to each of the three grade levels.

Level K-1. Twenty-one out of 23 (91%) teachers responded to the teacher's questionnaire. A majority of them judged the curriculum as being good (Appendix E). More than 60 percent reported using the materials, usually as a separate unit as well as integrated into the existing curriculum. Almost all (90%) K-1 teachers found the materials relatively easy to use.

All three concepts, Entry and Exiting, Importance of Wearing Safety Belts, and Safe Responsible and Courteous Passenger Behavior were taught by the majority of the teachers. Generally they considered the concepts as quite valuable (especially the concept on Importance of Wearing Safety Belts) and appropriate for the K-1 level. However, some teachers (11 to 25%) found these concepts a little dull for the students.

Suggested activities were considered most helpful, while masters for reproduction were considered least helpful for all three concepts. In addition, 20 percent of the teachers considered the "Portable Car Seat" as most helpful and another 12 percent viewed the "Car and Egg" demonstration activity as being most helpful. However, in responding to the next question, "What were the least helpful of the materials on the Importance of Wearing Safety Belts?", 37 percent of the teachers picked the "Car and Egg" demonstration. Thus, it appears that the "Car and Egg" demonstration received a mixed response from the K-1 teachers.

Comments received from teachers appear in Appendix F. Based on responses to Question 8, teachers seemed to prefer more

audiovisuals and practical materials. Overall, comments are positive as well as constructive.

Level 2-3. Seventy-eight percent (22 out of 28) of Level 2-3 teachers returned the questionnaire. Overall appraisal of the curriculum at this level is good (Appendix G). Most teachers used it and found it reasonable to use. Each concept was reported used by at least 90 percent of the respondents. Most teachers found the concepts valuable and appropriate for their grade level. Only about 10 percent of the teachers found the curriculum concepts a "little dull" for their students. As with the K-1 teachers, suggested activities were more often seen as most helpful, while masters for reproduction were more likely to be reported as least helpful. Both the "Portable Car Seat" and the "Car and Egg" demonstration activities received mixed reviews. About an equal proportion saw them as most as well as least helpful. The suggested activities for the concept of "Safe Responsible Behavior While Riding in a Car" also received mixed reviews.

Several themes emerge from the comments made by second and third grade teachers (Appendix H). First, there appears to be a need for more audiovisual materials. Second, the curriculum was generally considered good. According to the teachers, students found the mural activity (used with a large poster) very enjoyable. Finally, several teachers made the comment that the curriculum did not cover all items used in the knowledge tests. However, these comments should not be viewed as a weakness of the curriculum, because certain non-curriculum items were deliberately included in the knowledge tests to provide a basis

of comparison with changes in knowledge related to curriculum materials.

Level 4-6. Seventeen (71 percent) fourth and fifth grade teachers responded to the questionnaire. Although the curriculum was designed for use at the sixth grade level as well, there were no sixth grade classes in any of the five treatment schools. Therefore the following results must be interpreted accordingly.

Fifty-nine percent of the responding teachers rated the overall curriculum as excellent (Appendix I). An equal percent also reported using the curriculum to a considerable extent and usually in both formats (integrated into other courses and as a separate unit). All reported the materials to be either reasonable or easy to use. At this level there are five different concepts, namely, Entry and Exiting, Advantages of Wearing Safety Belts, Proper Use of Safety Belts, Riding in the Car, and Trip Planning. However, primarily because of lack of time, more than half of the teachers reported not using the Trip Planning concept.

The first three concepts were considered by the majority of the teachers as valuable, appropriate for the grade level, and interesting to use. Riding in the Car and Trip Planning were not considered as interesting as the other three areas. About half of the teachers reported that their students found Trip Planning materials a little dull. There may be too much math in this concept, and it may not be couched as interestingly as it might be. Teachers still preferred the suggested activities to the masters for reproduction. The "Portable Car

Seat" was not considered as helpful for the upper grades as for the lower elementary grades.

Comments from teachers (Appendix J) indicated a need for more advanced materials at this level. Presumably this need would be even greater at the sixth grade level. Another reason for restructuring the 4-6 curriculum is that not all teachers were able to cover all the materials. One suggestion was to spend less time on Entry and Exiting, since this concept should be grasped fairly easily by these older students. As in the other grade levels, teachers would like to have more audiovisual materials.

Summary . Overall, teachers gave a good appraisal to the Car Passenger Safety Curriculum. They used the materials to a considerable extent and found them to be appropriate and easy to use. Suggested activities were considered as more helpful than the masters for reproduction. The "Portable Car Seat" was considered very useful for teaching at the K-1 level but received mixed responses at the upper elementary grades. An activity preferred by both teachers and students is the Mural activity where children colored and decorated a large poster and teachers used it later to discuss potentially hazardous situations. Some revisions, e.g., more advanced activities, less emphasis on Entry and Exiting, more interesting activities for teaching the concept of Trip Planning, are probably needed to meet the needs of the upper elementary grades.

Assessment of Knowledge Change .

Pre- and post- knowledge tests were administered at both experimental and control schools in order to assess the amount of knowledge change that was associated with the use of curriculum. The

following describes the procedures used in developing and administering the tests, and their results.

Development of Knowledge Tests . The knowledge tests used in this study were developed by the Highway Safety Research Center, based on materials from the Car Passenger Safety Curriculum as well as from the K-9 Traffic Safety Curricululm (Padgett and Waller, 1975; Padgett, 1977). Separate tests were developed for third and fifth grades, with the fifth grade test being slightly longer and more difficult. Tests were not developed for the other elementary grades because time and budget constraints precluded the administration of knowledge tests to all elementary grades. Consequently, the third and fifth grades were selected as samples to represent the elementary students in this study.

Three parallel test forms were developed for each of the two grades. Each test form contained the same number of items (20 for the third grade test and 25 for the fifth grade test) and covered the same content areas. A total of six content areas were included in the test: Entry and Exit; Safety Belts; Safe, Responsible and Courteous Behavior; Pedestrian Safety; School Bus Safety; and Bicycle Safety (Appendix K). The last three topics were not part of the Car Passenger Safety Curriculum but were included in the knowledge tests as comparison items for purpose of measuring any knowledge change associated with the use of the curriculum materials.

The tests were made up of true-false items. Although it was recognized that a two choice format introduces a greater effect of guessing than would a multiple choice format, this simpler format was chosen for the elementary students who otherwise might have difficulty answering a multiple choice test.

Administration of Knowledge Tests . A project staff member from the Department of Public Instruction (DPI) personally visited the study schools and administered the pre- and post- knowledge tests to each third and fifth grade class in those schools. The pre-knowledge tests were given at the beginning of the 1982-1983 school year prior to the teaching of the curriculum in the treatment schools. However, since one treatment school did not begin teaching the curriculum until January, 1983, their pre-knowledge tests were also delayed until then. Post-knowledge tests were given toward the end of the 1982-1983 school year after the treatment schools had completed all the teaching related to the curriculum materials. Knowledge tests were administered to classes in the comparison schools at about the same time of year as the treatment schools.

In administering the test, students were first given some preliminary instructions about answering the test items by circling a "T" if they agreed or "F" if they disagreed with the statement. They were then told to write their names down legibly on the test form. Their names together with the teacher's name were used later for matching the pre- and post-knowledge tests together. During test administration, each question was read aloud twice to the students. Adequate time was allowed between each question so students could circle their answers after hearing each question. On the average, it took about 30 minutes to administer the knowledge test to each class.

About an equal number of classes took each form of the test because the three test forms were randomly asssigned to the classes. That is, when there were three third grade classes in

a school, one class took a Form A test, another one took a Form B test and the last class took a Form C test. Classes that took one test form during the pre-test would take the other two test forms in the post-test. Thus, a class that took Form A during the pre-test would take Form AA during the post-test. Form AA was made up of the items in Form B and Form C. This procedure was used so that all students at a particular grade level were given the same test items. Furthermore, this procedure meant that items used in the pre-test were not used with the same students again in the post-test, thus reducing the effects of memory or practice from influencing the post-test results.

Because of the complex scheme used in assigning pre- and post- test forms to each class, a special code was printed on each test form to minimize the chance of administering a wrong test for a class. Thus, Forms A, B and C were used as pre-tests for third graders while Forms D, E and F were used as pre-tests for fifth graders. Correspondingly, Forms AA, BB and CC were used as post-tests for third graders and Forms DD, EE, and FF were used as post-tests for fifth graders. As explained earlier, the post-tests were made up of the remaining two test forms, that is, Form AA was composed of Forms B and C, and Form BB included Forms A and C, and so on.

Analyses . Pre-curriculum knowledge tests were administered to 1596 students in third and fifth grade classes. Post-curriculum knowledge tests were administered to the same 57 classes toward the end of the 1982-1983 school year. However, not all post-knowledge tests were received by HSRC. Post-knowledge tests from one treatment school could not be

located, so that data from this school could not be used in the analysis of knowledge change. In addition, there were two other problems with the test data collected. First, some tests could not be matched on the basis of the students' names even after attempts were made to go back to hard copy test forms to verify students' names and to check back with school records to resolve any discrepancy regarding students' names. (However, these attempts were helpful in uncovering a number of matched tests). This problem could be a result of having different students present on the two testing dates. If a student was absent on one of the two testing dates, then a match on his name would not be possible. Second, even for those with a matched set of tests, the post-test form sometimes did not correspond to the pre-test form. To illustrate, students who took Form A in the pre-test should have taken Form AA in the post-test, but there were students who took Form A during the pre-test but Form BB or CC during the post-test. In total, there were 101 mismatched tests. This situation could arise from students changing classes or teachers between the two testing dates or merely from a misassignment of test form during the post-test administration. In any event, all cases with any one of the above three problems (missing post-test, unmatched name or mismatched post-test form) were taken out from the study file and not used in the knowledge change analysis. As a result, the knowledge change analyses were based on 1087 sets of matched pre- and post- tests.

Three types of analyses regarding knowledge change were conducted. Knowledge changes, as represented by the difference

between post-knowledge test score with the pre-knowledge test score, were compared between treatment and comparison groups. In addition, data were analyzed at the individual school level. Total test scores as well as the six subtest scores were included in the above analyses involving groups and schools. All analyses were conducted separately for third and fifth grades.

Results . The basic design of the study is that of a before and after experiment with a comparison group. Thus, a basic goal of the analysis is to compare the average relative change (from pre-test to post-test) of subjects in the treatment group with the corresponding relative change of subjects in the comparison group. Since the pre-test and post-test were made up of similar but different items and the post-test contained more items than the pre-test, the unit of change for a subject was based on the difference in the proportion of correct responses from pre-test to post-test for the subject. More specifically, for the ith subject (i=1, 2, ...N), a standardized score on jth subtest (j=1,2,.....n including the complete test) of the form

$$Z_{ij} = \frac{P_{ij}(2) - P_{ij}(1)}{\left[\frac{P_{ij}(1)\,(1-P_{ij}(1))}{N_{ij}(1)} + \frac{P_{ij}(2)\,(1-P_{ij}(2))}{N_{ij}(2)}\right]^{1/2}}$$

was computed, where $P_{ij}(1)$ was the proportion of correct answers for the ith subject on the jth subtest of the pre-test, $P_{ij}(2)$ was the corresponding proportion on the post-test, and N_{ij}

(1) and N_{ij}(2) were the numbers of items on the pre- and post-tests respectively. Under the null hypothesis of no change from pre-test to post-test, the Z_{ij} should be approximately normally distributed with a mean of zero and a variance of one. For a fixed value of j (given subtest), the Z_{ij}'s are independent and, therefore, these quantities could be summed over the subscript i by school, test type and group to provide test statistics for testing hypotheses concerning differences due to these factors.

Table 2 shows the mean change scores (Z), and sample sizes (N) for the complete test by school, group and grade. Since the mean scores show considerable variation between schools, and possibly between groups, a model was fit to the means to estimate and test effects due to school and group. Using a weighted least squares procedure, a model of the form

$$\hat{\mu} = X\hat{\beta},$$

was fit to the vector of means for a given grade, where X is a design matrix and β a vector of parameters estimated by the procedure. For the third grade scores, the design matrix

$$X = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 \\ 1 & 1 & 0 & 0 & 0 \\ 1 & 1 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 & 0 \\ 0 & 0 & 1 & 0 & 1 \\ 0 & 0 & 1 & 0 & 1 \end{bmatrix}$$

provided an excellent fit to the data. The first column of X indicates the experimental group of schools, the second is a special effect for schools 5 and 7. Similarly, the third column indicates the comparison schools, while columns 4 and 5 are special effects for school 6 and for schools 8 and 10, respectively. The coefficients of the columns of the design matrix were estimated to be

$$\hat{\beta} = \begin{bmatrix} .54 \\ -.45 \\ -.26 \\ .78 \\ .41 \end{bmatrix}$$

and were all statistically significant. This shows that the average change scores do differ significantly between schools. For example, the negative coefficient $\hat{\beta}_2 = -.45$ indicates that the average scores for schools 5 and 7 are significantly lower than those of schools 3 and 9 in the treatment group. For the comparison group, the positive coefficients $\hat{\beta}_4 = .78$ and $\hat{\beta}_5 = .41$ indicate that school 6, and schools 8 and 10 had significantly higher average scores than schools 2 and 4. Moreover, school 6 is significantly higher than schools 8 and 10.

A test of an overall group effect was made by estimating the linear function

$$C_{12} = \beta_1 + .52\beta_2 - \beta_3 - .21\beta_4 - .51\beta_5$$

This function represents the difference between the overall group means obtained as a weighted average of the individual school means. The estimate of C_{12} was $C_{12} = .189$, with $\chi^2_{1d.f.} = 4.69$, $p < .05$. These results show that there was a significant difference in the average change scores between groups. The positive sign of C_{12} indicates that the treatment group showed greater overall improvement than did the comparison group.

Figures 1 through 6 accompanied by Tables 3 and 4 show the fitted values of the mean change scores for each school for the complete test and each subtest for the third grade. Also shown are the overall group (treatment and comparison) means for each test and subtest. The asterisks indicate that the difference between group means is statistically significant at a one percent level of significance (a single asterisk would indicate significance at the five percent level). Distinct values of mean scores for different schools within the same group represent statistically significant differences. That is, mean scores for a given (sub)test for different schools within the same group which do not differ significantly have the same fitted value.

From those Figures and Tables, it can be seen that the treatment group scores significantly higher than the comparison group on the complete test and also on the entry and exiting, and school bus safety subtests. In each of these cases, the treatment group mean was positive, indicating an overall improvement from pre-test to post-test for that group. The comparison group, on the other hand, showed a slight improvement from pre to post on the complete test, virtually no change on

the entry and exiting subtest, and a decrease on the school bus safety subtest.

In addition, the third grade results show that the overall group differences on the complete test result almost entirely from differences for those students taking test C.

The results for the fifth grade by the two groups are essentially the reverse of those for the third grade (Figures 7 through 9 and Table 5). Here the two groups differ significantly on the complete test, and the pedestrian and school bus safety subtests. In each of these the treatment group shows an overall decrease in performance from pre-test to post-test, while the comparison group either increases or has a lesser decrease.

It is also of interest to note that the fifth graders taking Form B did worse on the post-test in both groups for most of the subtests (Figures 10 through 12 and Table 6). Since there was no opportunity to equate tests on difficulty level, it is possible that Form B was an easier test than Forms A and C. Since Form BB was made up of Forms A and C, and such differences in difficulty level could result in a lower score on the second testing.

Considerable variation can be seen between schools within each of the groups for both third and fifth grades.

Observed Safety Belt Usage

Data Collection Procedures . Observations were made of safety belt usage by children driven to school. Data were collected both prior to and following the use of the curriculum in the treatment schools. The collection of the pre-curriculum

data, hereafter referred to as Session I, occurred during April and May, 1982, prior to the teaching of the curriculum in the treatment schools. The post-curriculum data, hereafter referred to as Session II, were collected during April and May, 1983, after all five treatment schools had finished teaching the curriculum. It was felt that it was important that Session I and Session II occur at approximately the same time of year, since student behavior varies from one season to another.

Although the observers for Session II were not the same as for Session I, the same training and data collection procedures were used for both sessions. In each instance, schools were notified at the beginning of the week that observers would be at their schools some time during that week, but schools were not told the specific day. Such a procedure allowed some flexibility in the observation schedule while minimizing any possible effects that could have resulted from the observers being expected on a particular day.

Data collection trips alternated between treatment and comparison schools. On the day of observation, two observers arrived at the school prior to the students' arrival (in some schools this could be as early as 7:30am) and positioned themselves in those places where most of the children were being dropped off. These places had been identified during previous visits to the schools.

The observers recorded driver's belt use, driver's race, student's belt use and seat position, student's race, and the incidence of crowding (student in nonconventional seat position such as between bucket seats or in the cargo area where no seat

belts were available). Special coding rules were developed for adult passengers, nonelementary students, positions with no passengers, and places where seat belts were not available (see Appendix L). Information was coded on up to six occupants in a passenger car or pickup truck. In addition, observers were instructed to obtain information on as many cars as possible passing through their designated areas.

Observer Reliability . Prior to project data collection, training and practice sessions were conducted at elementary schools in the Chapel Hill school system to familiarize the observers with the data form and coding procedures. Reliability (agreement between the two observers) was assessed at the end of training. For the observers used in Session I, two reliability trials were conducted, and agreement between the two observers was 99 percent in both instances. There were very few disagreements, and in no instances did a disagreement pertain to the belt use status of the students. Following training of observers for Session II, two reliability trials were again conducted. In each of these instances reliability was .94, slightly lower than those obtained in the previous year. There were more disagreements between these two observers, mostly related to the coding of a bucket seat (requires the observer to mark out the center front position, and consequently any occupant in between the two front seats would be counted as crowding) and to coding of the nonbelted occupant (if an unbelted occupant were omitted, it would be treated as an unoccupied seat in the analysis; unoccupied seats were not considered in the computation for belt usage rates). In spite

of some such disagreements, averaged reliabilities for both Session I and Session II were above .90, indicating that at least 90 percent of the time the pairs of observers coded the information consistently during the reliability trials. Thus, it may be concluded that for each session, agreement between the two observers was high prior to actual data collection at the study schools.

Description of Sample . A total of 2555 observations were made of students who were being transported to the ten study schools during the spring of 1982 and 1983 (Table 7). More observations (1448) were made at the comparison schools than at the treatment schools. Also, there were slightly more observations (1423) during the pre-curriculum phase (Session I) than in the post-curriculum phase (Session II). The majority of the students observed were white, with only 11 percent nonwhite.

The right front seat position was the one most frequently observed to be occupied by the students (56 percent of the student observations). Fewer than 10 percent of the students observed were in the center rear seat, considered to be the safest position.

Data were collected by four different observers, two during each session. Observer #1 collected more observations than any of the other three observers. This occurred because she was on crutches at the time and could not move about easily and therefore was assigned to the high traffic volume areas.

Analyses of Pre-Curriculum Data . Driver's belt use, student's belt use, and crowding were the three variables used for analyzing the relationships between treatment and comparison

groups and between whites and nonwhites. These results are presented in Tables 8 and 9. Overall, analyses of the data obtained during Session I were mostly nonsignificant, except for driver race by belt usage. White drivers were more likely to be belted (12%) than nonwhite drivers (3%). Pre-curriculum belt usage for students was very low (around 3%) for both treatment and comparison groups. White students showed slightly higher belt usage than nonwhite students (3.4% versus 2.1%), but the difference was not statistically significant.

Crowding, that is, having students in a nonconventional seat position where belts were not available (e.g., cargo area, between bucket seats), was observed with equal frequency (about 7%) in treatment and comparison groups and in vehicles driven by white and nonwhite drivers. Based on these results, it may be concluded that treatment and comparison groups showed similar belt usage patterns prior to the implementation of the curriculum in the treatment schools. This similarity indicates that any differences found in the post-treatment phase are more likely to be attributable to the curriculum.

Analyses of Post-Curriculum Data . In contrast to the earlier findings, almost all analyses of the post-curriculum data (Session II) were significant at $p < .10$ and three of the comparisons were significant at $p < .01$ (Table 10). The treatment group showed higher rates of belt usage for drivers as well as for students and lower incidence of vehicle crowding. In fact, the students' belt usage rate in the treatment group was almost twice the usage rate for the comparison group.

The curriculum appears to have a differential effect for

whites and nonwhites (Table 11). Higher belt usage rates were observed for white drivers and students. White drivers were three times more likely to be using belts than their nonwhite counterparts, and white students were eight times more likely to be belted than nonwhite students. Analysis of driver race by crowding was not significant.

Analyses of Net Gain in Belt Usage Rates . The above analyses examined the belt usage rates for each separate time interval, but did not assess the change in belt usage rates from the pre-curriculum phase to the post-curriculum phase for the different groups. To illustrate, although students in the treatment group increased their belt usage rate from three percent to 14 percent from the first to the second time period, students in the comparison group also increased their belt usage rate in the comparable time period from 3.4 percent to 7.6 percent. In fact, except for the nonwhite students, all groups showed an increase in belt usage.

To assess the magnitude of the changes exhibited by the different goups, Generalized Chi Square Analyses of Categorical Data were conducted with the belt usage data. This statistical test measures the change of one group against another and therefore can provide further information regarding the contribution of the curriculum to increasing belt usage above and beyond that experienced by the comparison group.

Table 12 shows these results, first by group and then by student race. Both analyses are significant at $p < .01$. The treatment goup showed a net gain (ΔE) of 11.2 percent in belt usage, while the net gain (ΔC) in the comparison group is only

4.2 percent. Or, stating it a little differently, the gain found in the treatment group is about two and a half times that obtained in the comparison group.

White students showed a significantly larger gain in belt usage than nonwhite students. In fact, there was a slight decrease in belt usage among the nonwhite students. Thus, the curriculum appears to show differential effectiveness depending on the student's race.

Similar analyses were conducted for driver's belt usage by group and driver's race. However, these results were nonsignificant (Table 13). Drivers in the treatment group showed a net belt usage gain of five percent, not much higher than the gain of 3.3 percent experienced by the comparison group.

White drivers increased their belt usage 4.6 percent, while nonwhite drivers showed a 2.2 percent gain. The net difference in gain, 2.4 percent, was not statistically significant.

Relationship between driver's belt usage and other variables . Driver's belt usage was found to be significantly related to student's belt usage (Table 14, $p < .01$) and to the incidence of vehicle crowding (Table 15, $p < .01$). On the whole, students were more likely to be wearing belts (41 percent of the time) when the driver was also belted than when the driver was not belted. Only one percent of students were belted when the driver was not belted. Crowding occurred more frequently (almost 7%) in vehicles where the driver was not belted than where the driver was belted. These findings underscore the important relationship between the safety habits of drivers and

their passengers.

Summary . Based on the results, it may be concluded that the K-6 Car Passenger Safety Curriculum was effective in increasing student's belt usage at the five treatment schools. The gain in student's belt usage for the treatment group is about two and a half times that found for the comparison group where the curriculum was not taught. This difference is highly significant. The findings also indicate that the curriculum is differentially beneficial for white students, showing no effect for the nonwhite student.

Driver's belt usage was not statistically affected by the curriculum. However, there were relationships found between driver's belt usage and student's belt usage, as well as vehicle crowding.

Recommendations

While it may be concluded that on the basis of observed safety belt usage the Car Passenger Safety Curriculum was effective, nevertheless there remains room for improvement. Major recommendations include increasing the involvement of teachers, with some personal follow-up with them during the school year in which the curriculum is being used; increased availability of audiovisual materials; development of more advanced materials for the 4-6 grade level; and continued use of the curriculum materials so that students have the opportunity to build on information previously acquired.

Although a workshop was conducted with the teachers prior to the use of the curriculum, it is unrealistic to expect a single exposure to the kind of materials presented to provide

adequate preparation for teachers undertaking a very different teaching topic. While some teachers appeared able to take the information and develop it further on their own, others could probably have benefited from a structured opportunity to discuss some of the concepts further. Such discussions could have occurred among themselve, but initially they would probably be enhanced by the presence of someone more knowledgeable about the topic. Discussion meetings would also enable teachers to share with each other ideas that they may develop on their own. For example, one teacher suggested that it may be possible to have the PTA obtain seats from cars (e.g., from a junk yard) along with seat belts and set them up for the reading area in the classroom. Students would buckle up for the duration of the reading session. One school had the students sponsor a booth at a health fair at a major shopping center in Raleigh. These students displayed the materials they had developed and used the Car and Egg demonstration to show how restraint systems work. Presumably once the curriculum materials had been in use for a while, teachers would become more familiar with them and hence more comfortable in their use.

At all grade levels the teachers felt that additional audiovisual materials would be helpful. Some concepts can better be taught with such aids, and there may be materials in addition to those provided that would reinforce the importance of occupant restraint.

Although an effort was made to include more difficult materials at the 4-6 grade level, the feedback from the teachers indicates that there is a need for even more advanced materials

at this grade level. Additional effort is required to develop these materials.

Finally, as with any important subject matter, there is a need for continued use of the curriculum materials so as to reinforce and develop further the concepts taught at the earlier grade levels.

As with any major public health problem, education regarding the use of occupant restraints to reduce motor vehicle injuries should be considered primarily as a necessary part of a more comprehensive countermeasure. Ultimately the most effective approach is required restraint system usage coupled with education to enable the public to understand the importance of the measure. The Car Passenger Safety Curriculum is a significant component of such a comprehensive approach but cannot be expected to achieve major impact in isolation from other efforts.

Summary and Conclusions

A Car Passenger Safety Curriculum was developed for Grades K-6 and pilot tested in an elementery school system. The curriculum included materials at three levels, namely, K-1, 2-3, and 4-6. Many of the activities could be incorporated into subject matter being taught, while other activities could be taught as separate units.

Ten elementary schools were included in the study, with five serving as treatment schools and the other five as comparison schools. Prior to the implementation of any curriculum materials, observations were made at all ten schools of actual belt usage of children being driven to school.

Workshops were conducted with teachers at the five treatment schools to familiarize them with the importance and effectiveness of safety belt usage and with the curriculum materials. After the workshops were conducted, but before any materials were taught, knowledge tests were administered to third and fifth grade students in the treatment schools. Tests were also administered at the comparison schools shortly afterward. Following the use of the curriculum materials in the treatment schools, knowledge tests were again administered at all ten schools. Also, following the use of the curriculum, belt usage observations were repeated at all ten schools. In addition, principals and teachers at the treatment schools completed questionnaires to provide information on administrative and teaching feasibility of the curriculum.

Both principals and teachers generally found the curriculum worthwhile. Some of the materials for grades 4-6 were considered too easy for many of the students and probably need to be revised accordingly. Teachers varied in their reactions to some of the activities, with certain activities chosen as both the most useful and the least useful by different teachers. Generally, all teachers expressed a need for more audiovisual materials.

A portable car seat, complete with safety belt, that had been made available for "Hands On" experience by children was found to be helpful at the lower grades but not particularly so at the upper ones.

The knowledge tests provided mixed results. Generally, at the third grade level the treatment group scored higher on the

tests than the comparison group, but at the fifth grade level the exact opposite was the case. Furthermore, there was considerable variation among schools and subtopics. Hence, it is very difficult to arrive at meaningful interpretations of the knowledge test data.

The observations of actual belt usage showed significantly greater increases in usage by children at the treatment schools. Although both treatment and comparison groups increased their usage, the net gain at the treatment schools was almost two and a half times that in the comparison schools. Furthermore, the treatment group showed higher rates of belt usage for drivers, as well as a lower incidence of "crowding" (children in nonconventional seat positions, such as between bucket seats or in the cargo area of stations wagon).

The curriculum appeared to be differentially beneficial for white students, with nonwhite children showing no apparent effect.

It should be noted that the Car Passenger Safety Curriculum is designed to continue throughout the elementary school years. The evaluation conducted was based on a single year's experience, so that any effects observed should be considered minimal. Presumably the child in kindergarten would be re-exposed to curriculum information in first grade and again in second, and so on. Hence, just as is true for other materials taught (e.g., arithmetic, spelling), the cumulative effects should be expected to result in greater learning.

While it may be concluded that the use of the Car passenger Safety Curriculum was associated with highly significant

increases in observed belt usage, it should also be noted that the absolute belt usage was very low (14%, up from 3% prior to the curriculum for the treatment group). It is of some importance to recognize that in countries where belt usage is mandatory, major increases are observed overnight. A recent report by Ashton, Mackay, and Camm (1983) describes the British experience. In the United Kingdom a law requiring safety belt usage was implemented at the end of January, 1983. Subsequent studies of observed usage report usage rates in excess of 90 percent. Clearly if the health and safety of children is seriously considered important, it must be recognized that there are readily available low cost strategies for obtaining much greater increases in usage than can be expected in the foreseeable future solely through educational efforts.

References

Ashton, S. J., Mackay, G. M., and Camm, S. Seat belt use in Britain under voluntary and mandatory conditions. In 27th Proceedings American Association for Automotive Medicine. Arlington Heights, IL: American Association for Automotive Medicine, 1983.

National Safety Council. Accident Facts. Chicago: National Safety Council, 1982.

TABLES

Table 2. Overall Test Changes by School, Group and Grade

		Third Grade				Fifth Grade			
		Experimental		Comparison		Experimental		Comparison	
Population	School	Z	N	Z	N	Z	N	Z	N
1	3	.592	34			.013	33		
2	5	.016	55			-.522	34		
3	7	.140	76			-.215	86		
4	9	.520	89			.090	79		
5	2			-.193	59			-.380	46
6	4			-.347	46			.552	44
7	6			.525	63			-.081	68
8	8			.215	42			.346	48
9	10			.118	66			.238	119

Table 3. Test Scores for Third Grade by Group and Schools

	Treatment				Comparison				
	3	5	7	9	2	4	6	8	10
Complete test mean scores	.54	.09	.09	.54	-.26	-.26	.53	.15	.15
Group means**			.31				.08		
Entry & exit	.73	-.30	.35	.35	-.34	-.14	.89	.25	.25
Group means**			.26				-.01		
Seat Belt	-.10	-.10	-.22	.45	-.18	.41	.01	-.18	-.18
Group means			.10				-.04		
SRC	.13	.13	.13	.13	-.23	-.50	.70	.11	.11
Group means			.13				.07		
Pedestrian safety	-.14	-.14	-.14	1.30	-.08	-.89	.60	-.08	-.08
Group means			-.09				-.06		
School bus safety	.79	.25	-.16	-.16	-.40	-.78	.33	.33	-.40
Group means**			.05				-.19		
Bike safety	-.40	-.40	.21	.21	-.33	.61	-.58	.03	.61
Group means			-.01				.05		

**Indicates that group means differed significantly at a significance level of $p < .01$

Table 4. Test Scores for Third Grade by Group and Tests

	Treatment			Comparison		
	A	B	C	A	B	C
Complete test mean scores	.34	.34	.17	.32	.32	-.38
Group means		.31			.08	
Entry & exit	.68	.68	-1.33	.68	1.06	-1.67
Group means		.26			-.01	
Seat Belt	-.02	-.02	.54	-.23	-.23	.33
Group means		.10			-.04	
SRC	-.14	.47	.24	.21	.63	-.44
Group means		.13			.07	
Pedestrian safety	-.37	.34	.04	-.37	.71	-.60
Group means		-.09			-.06	
School bus safety	-.20	.82	-.69	-.20	.45	-.69
Group means		.05			-.19	
Bike safety	.86	-1.74	.66	.86	-1.37	.62
Group means		-.01			.05	

Table 5. Test Scores for Fifth Grade by Group and Schools

	Treatment				Comparison				
	3	5	7	9	2	4	6	8	10
Complete test mean scores	.07	-.30	-.30	.07	-.20	.55	-.20	.27	.27
Group means**		-.12					.14		
Entry & exit	-.35	-1.00	-.35	-.35	-.47	-.06	-.76	-.47	-.06
Group means		-.44					-.33		
Seat Belt	.01	.01	-.42	.01	-.59	.41	-.17	.04	.04
Group means		-.15					-.04		
SRC	.33	.33	-.08	-.08	-.31	.02	.36	.36	.02
Group means		.03					.09		
Pedestrian safety	-.33	-1.46	-.33	-.33	.41	-.27	-.27	-.27	.10
Group means**		-.49					-.04		
School bus safety	-.99	-.99	-.37	-.37	-.06	-.06	-.41	-.41	-.06
Group means**		-.55					-.18		
Bike safety	.79	.47	.03	.03	-.78	.44	.44	.91	-.04
Group means		.20					.16		

**Indicates that group means differed significantly at a significance level of .01

Table 6. Test Scores for Fifth Grade by Group and Tests

	Treatment			Comparison		
	A	B	C	A	B	C
Complete test mean scores	.52	-.97	-.22	.52	-.34	.11
Group means		-.12			.14	
Entry & exit	.32	-.36	-1.14	-.01	.42	-1.14
Group means		-.44			-.33	
Seat Belt	.27	-1.62	.27	.28	-.94	.28
Group means		-.15			-.04	
SRC	.12	-.94	.46	.24	-.81	.59
Group means		.03			.09	
Pedestrian safety	-.34	.89	-1.33	-.34	1.45	-.81
Group means		-.49			-.04	
School bus safety	-.56	.63	-1.14	-.18	.62	-.75
Group means		-.55			-.16	
Bike safety	.75	-1.86	.75	.75	-1.73	.96
Group means		.20			.16	

Table 7. Description of Behavioral Observations

Group	
Treatment	1107 (43.3%)
Comparison	1448 (56.7%)
Session	
1	1423 (55.7%)
2	1132 (44.3%)
School	
Northridge	360 (14.1%)
Aversboro	365 (14.3%)
Powell	108 (4.2%)
Douglas	198 (7.7%)
Conn	144 (5.6%)
Brentwood	248 (9.7%)
Farmington Woods	317 (12.4%)
Green	300 (11.7%)
Adams	178 (7.0%)
Cary	337 (13.2%)
Race	
White	2270 (88.8%)
Nonwhite	285 (11.2%)
Seat Position	
Center Front	123 (4.8%)
Right Front	1437 (56.2%)
Left Back	300 (11.7%)
Center Back	167 (6.5%)
Right Back	528 (20.7%)
Observer	
1 (Session 1)	1075 (42.1%)
2 (Session 1)	348 (13.6%)
3 (Session 2)	568 (22.2%)
4 (Session 2)	564 (22.1%)

Table 8. Analyses of Comparison and Treatment Schools - Session I

Driver's Belt Usage

	Belted	Not Belted	Total
Comparison	53 (9.5%)	504 (90.5%)	557
Treatment	52 (12.5%)	364 (87.5%)	416
	105 (10.8%)	868 (89.2%)	973

Chi Square = 2.2; df = 1; Not significant

Student's Belt Usage

	Belted	Not Belted	Total
Comparison	28 (3.4%)	788 (96.6%)	816
Treatment	18 (3.0%)	589 (97.0%)	607
	46 (3.2%)	1377 (96.8%)	1423

Chi Square = 0.2; df = 1, Not significant

Crowding

	Yes	No	Total
Comparison	38 (6.8%)	519 (93.2%)	557
Treatment	28 (6.7%)	388 (93.3%)	416
	66 (6.8%)	907 (93.2%)	973

Chi Square = 0.0; df = 1; Not significant

Table 9. Analyses by Race - Session I

Driver's Belt Usage

Driver's Race	Belted	Not Belted	Total
White	102 (11.6%)	775 (88.4%)	877
Nonwhite	3 (3.1%)	93 (96.9%)	96
	105 (10.8%)	868 (89.2%)	973

Chi Square = 6.5; df = 1; $p < .05$

Student's Belt Usage

Student's Race	Belted	Not Belted	Total
White	43 (3.4%)	1236 (96.6%)	1279
Nonwhite	3 (2.1%)	141 (97.9%)	144
	46 (3.2%)	1377 (96.8%)	1423

Chi Square = 0.68; df = 1; Not significant

Crowding

Driver's Race	Yes	No	Total
White	59 (6.7%)	818 (93.3%)	877
Nonwhite	7 (7.3%)	89 (92.7%)	96
	66 (6.8%)	907 (93.2%)	973

Chi Square = 0.04; df = 1; Not significant

Table 10. Analyses of Comparison and Treatment Schools - Session II

Driver's Belt Usage

	Belted	Not Belted	Total
Comparison	55 (12.8%)	376 (87.2%)	431
Treatment	64 (17.5%)	302 (82.5%)	366
	119 (14.9%)	678 (85.1%)	797

Chi Square = 3.5; df = 1; $p < .10$

Student's Belt Usage

	Belted	Not Belted	Total
Comparison	48 (7.6%)	584 (92.4%)	632
Treatment	71 (14.2%)	429 (85.8%)	500
	119 (10.5%)	1013 (89.5%)	1132

Chi Square = 12.9; df = 1; $p < .01$

Crowding

	Yes	No	Total
Comparison	30 (6.9%)	403 (93.1%)	433
Treatment	13 (3.5%)	354 (96.5%)	367
	43 (5.4%)	757 (94.6%)	800

Chi Square = 4.5; df = 1; $p < .05$

Table 11. Analyses by Race - Session II

	Driver's Belt Usage		
Driver's Race	Belted	Not Belted	Total
White	114 (16.2%)	588 (83.8%)	702
Nonwhite	5 (5.3%)	90 (94.7%)	95
	119 (14.9%)	678 (85.1%)	797

Chi Square = 7.9; df = 1; p < .01

	Student's Belt Usage		
Student's Race	Belted	Not Belted	Total
White	117 (11.8%)	874 (88.2%)	991
Nonwhite	2 (1.4%)	139 (98.6%)	141
	119 (10.5%)	1013 (89.5%)	1132

Chi Square = 14.2; df = 1; p < .01

	Crowding		
Driver's Race	Yes	No	Total
White	36 (5.1%)	668 (94.9%)	704
Nonwhite	7 (7.4%)	88 (92.6%)	95
	43 (5.4%)	756 (94.6%)	799

Chi Square = 0.84; df = 1; Not significant

Table 12. Generalized Chi Square Analysis of Categorical Data - Student's Belt Usage

Group by Session by Student's Belt Usage

	Session I	Session II
Comparison (C)	3.4%	7.6%
Treatment (E)	3.0%	14.2%

$\Delta C = 7.6\% - 3.4\%$
$= 4.2\%$

$\Delta E = 14.2\% - 3.0\%$
$= 11.2\%$

$\Delta E - \Delta C = 7.0\%$
Chi Square = 11.3; df = 1; $p < .01$

Student's Race by Session by Student's Belt Usage

	Session I	Session II
White (W)	3.4%	11.8%
Nonwhite (NW)	2.1%	1.4%

$\Delta W = 11.8\% - 3.4\%$
$= 8.4\%$

$\Delta NW = 1.4\% - 2.1\%$
$= -.7\%$

$\Delta W - \Delta NW = 8.4\% - (-.7\%)$
$= 9.1\%$
Chi Square = 22.3; df = 1; $p < .01$

Table 13. Generalized Chi Square Analysis of Categorical Data - Driver's Belt Usage

Group by Session by Driver's Belt Usage

	Session I	Session II
Comparison (C)	9.5%	12.8%
Treatment (E)	12.5%	17.5%

$\Delta C = 12.8\% - 9.5\%$
$= 3.3\%$

$\Delta E = 17.5\% - 12.5\%$
$= 5\%$

$\Delta E - \Delta C = 1.7\%$
Chi Square = 0.28; df = 1; Not significant

Driver's Race by Session by Driver's Belt Usage

	Session I	Session II
White (W)	11.6%	16.2%
Nonwhite (NW)	3.1%	5.3%

$\Delta W = 16.2\% - 11.6\%$
$= 4.6\%$

$\Delta NW = 5.3\% - 3.1\%$
$= 2.2\%$

$\Delta W - \Delta NW = 2.4\%$
Chi Square = 0.53; df = 1; Not significant

Table 14. Driver's Belt Usage by Student's Belt Usage

Student's Belt Usage*	Driver Belted	Driver Not Belted
Belted	139 (41.4%)	26 (1.2%)
Not Belted	197 (58.6%)	2191 (98.8%)
	336	2217

Chi Square = 779.8; df = 1; $p < .01$

*This analysis was based on all the students in the vehicle. The driver data was duplicated for each student in the vehicle

Table 15. Driver's Belt Usage by Vehicle Crowding

Vehicle Crowding	Driver Belted	Driver Not Belted
Yes	3 (1.3%)	106 (6.9%)
No	221 (98.7%)	1440 (93.1%)
	224	1546

Chi Square = 10.3; df = 1; $p < .01$

Figure 1. Third Grade Mean Change Scores (Complete Test) by Test Form and Group.

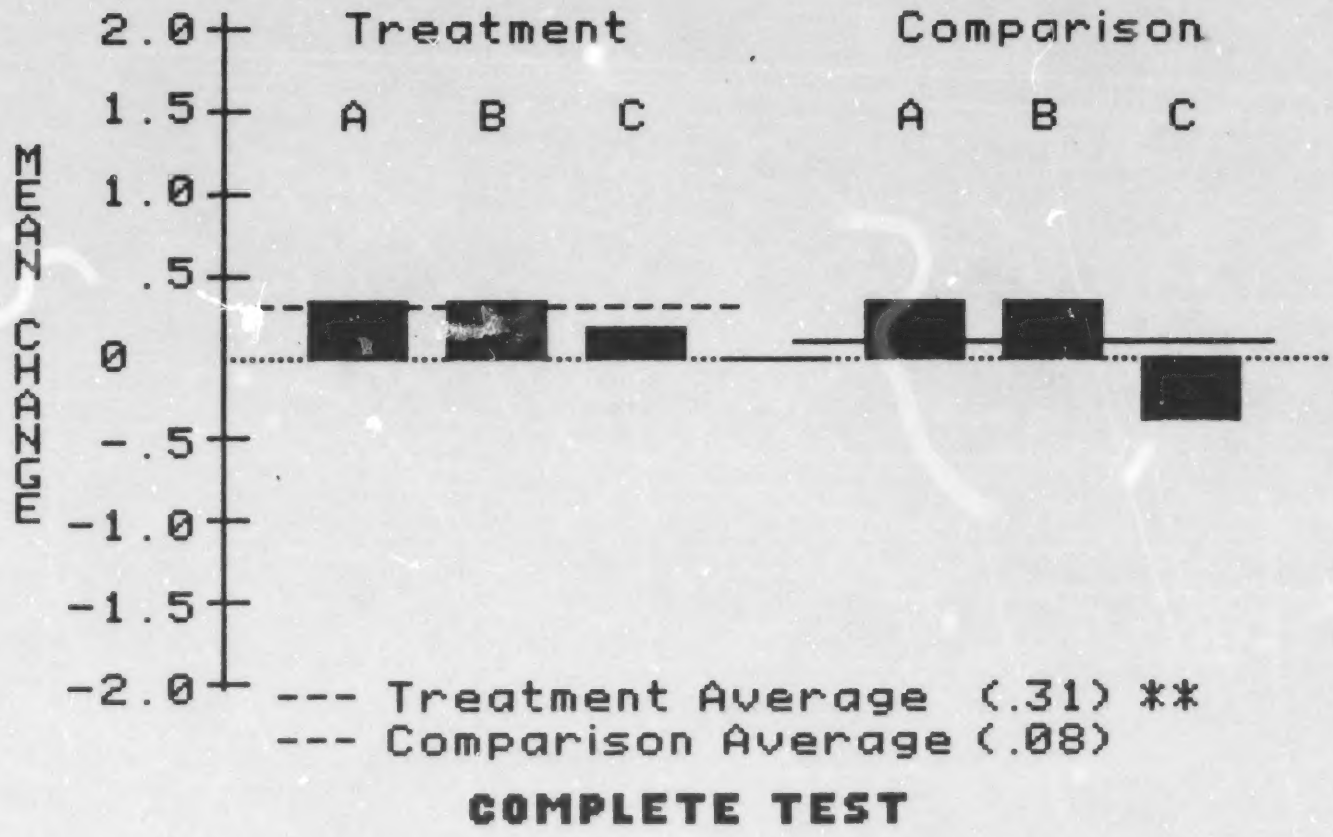
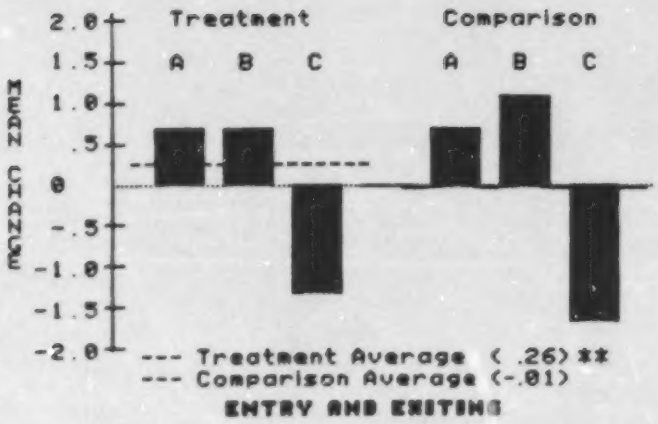
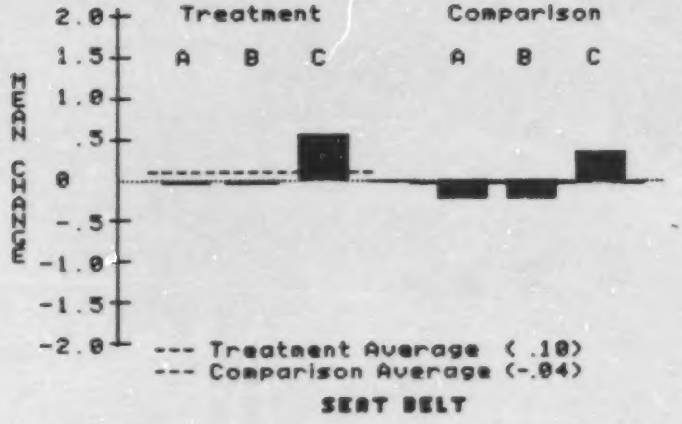


Figure 2. Third Grade Mean Change Scores (Curriculum Subtest) by Test Form and Group.





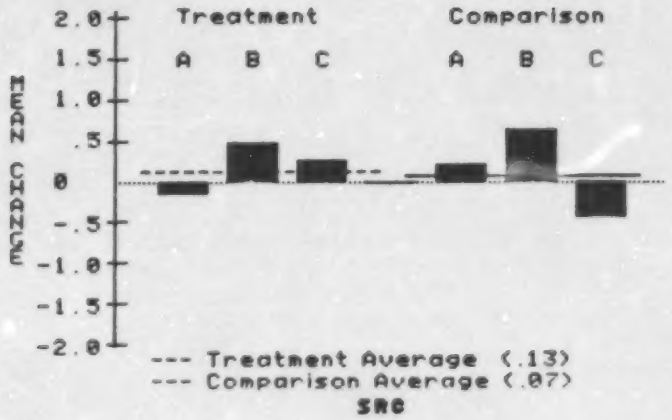
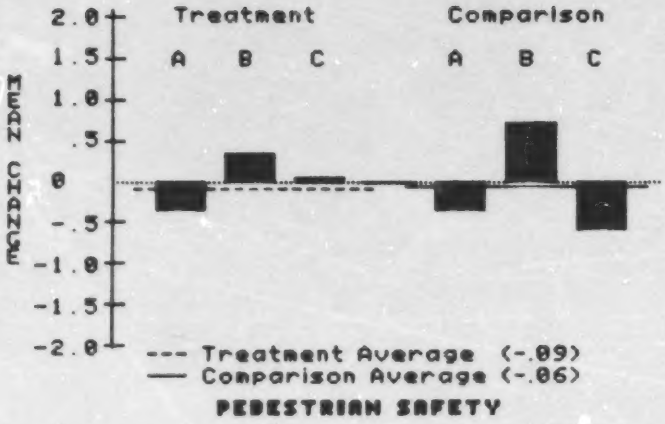
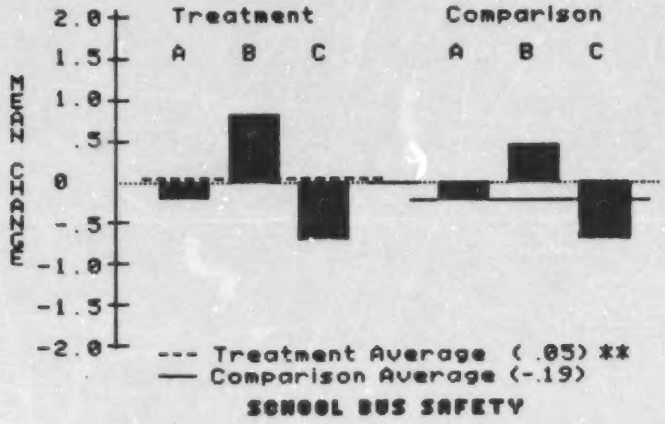


Figure 3. Third Grade Mean Change Scores (Non-Curriculum Subtest) by Test Form and Group.





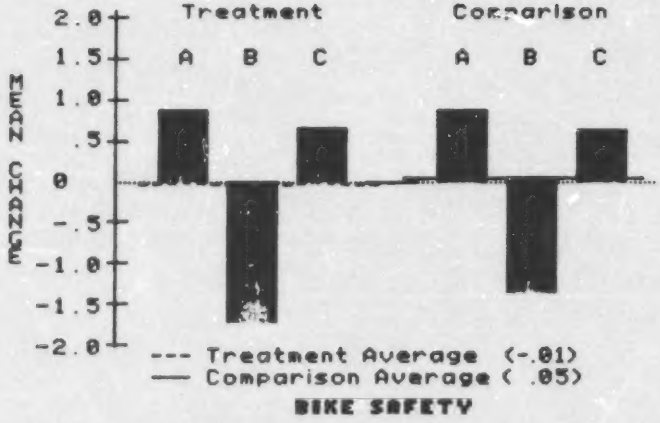


Figure 4. Third Grade Mean Change Scores (Complete Test) by School and Group.

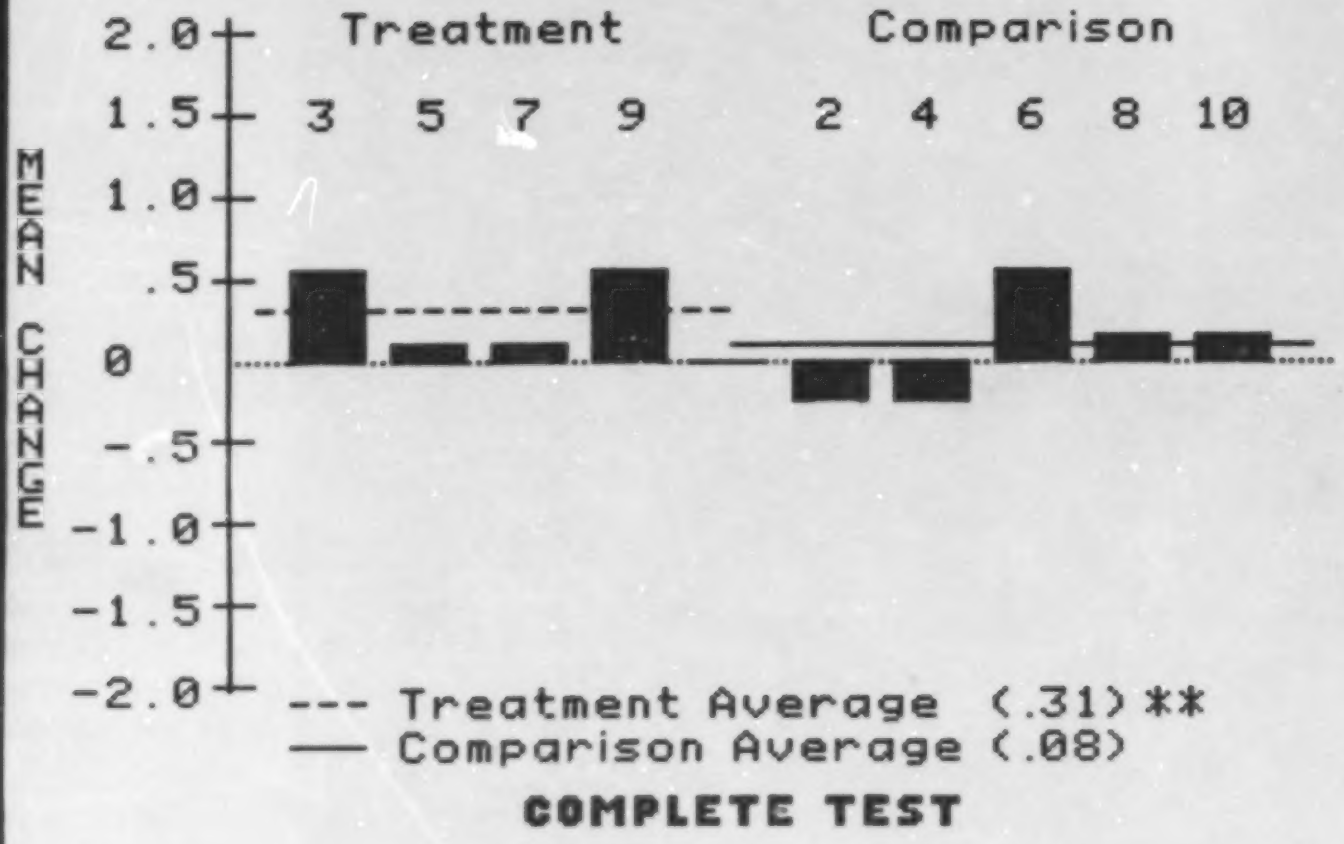
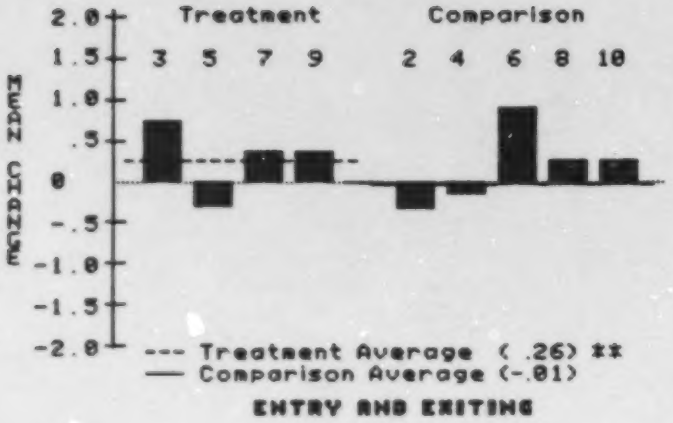
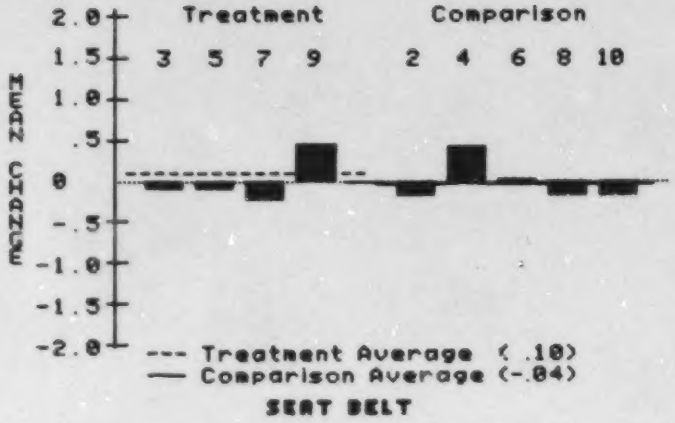


Figure 5. Third Grade Mean Change Scores (Curriculum Subtest) by School and Group.





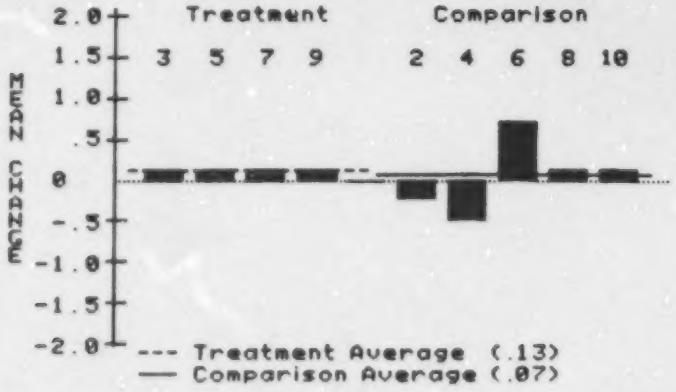
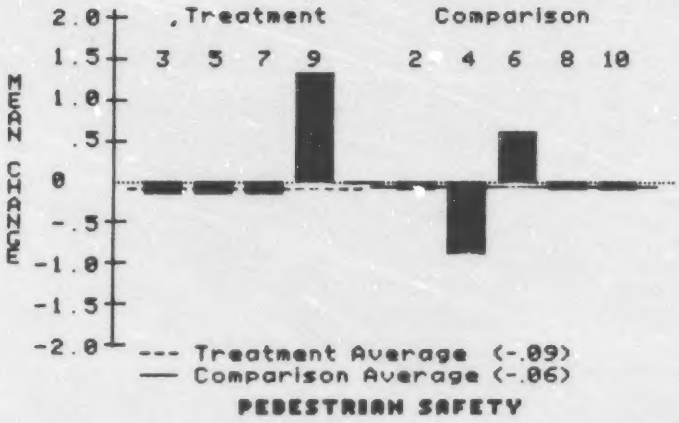
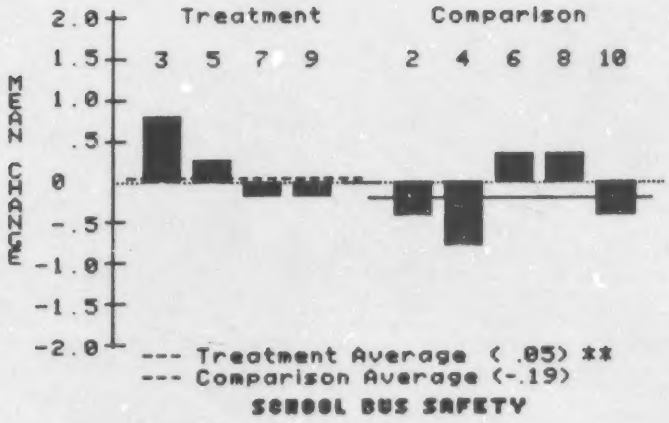


Figure 6. Third Grade Mean Change Scores (Non-Curriculum Subtest) by School and Group.





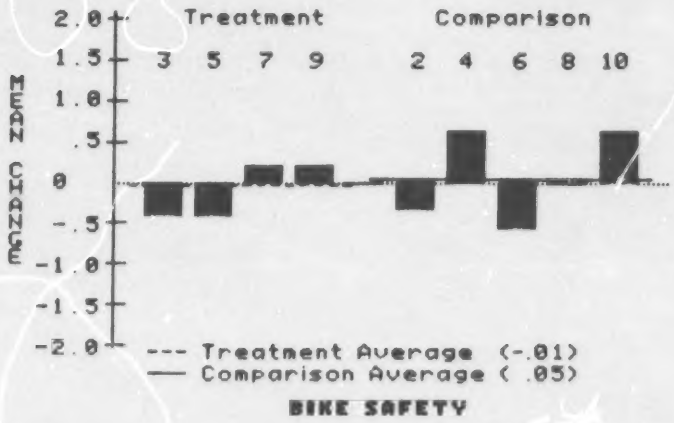


Figure 7. Fifth Grade Mean Change Scores (Complete Test) by Test Form and Group.

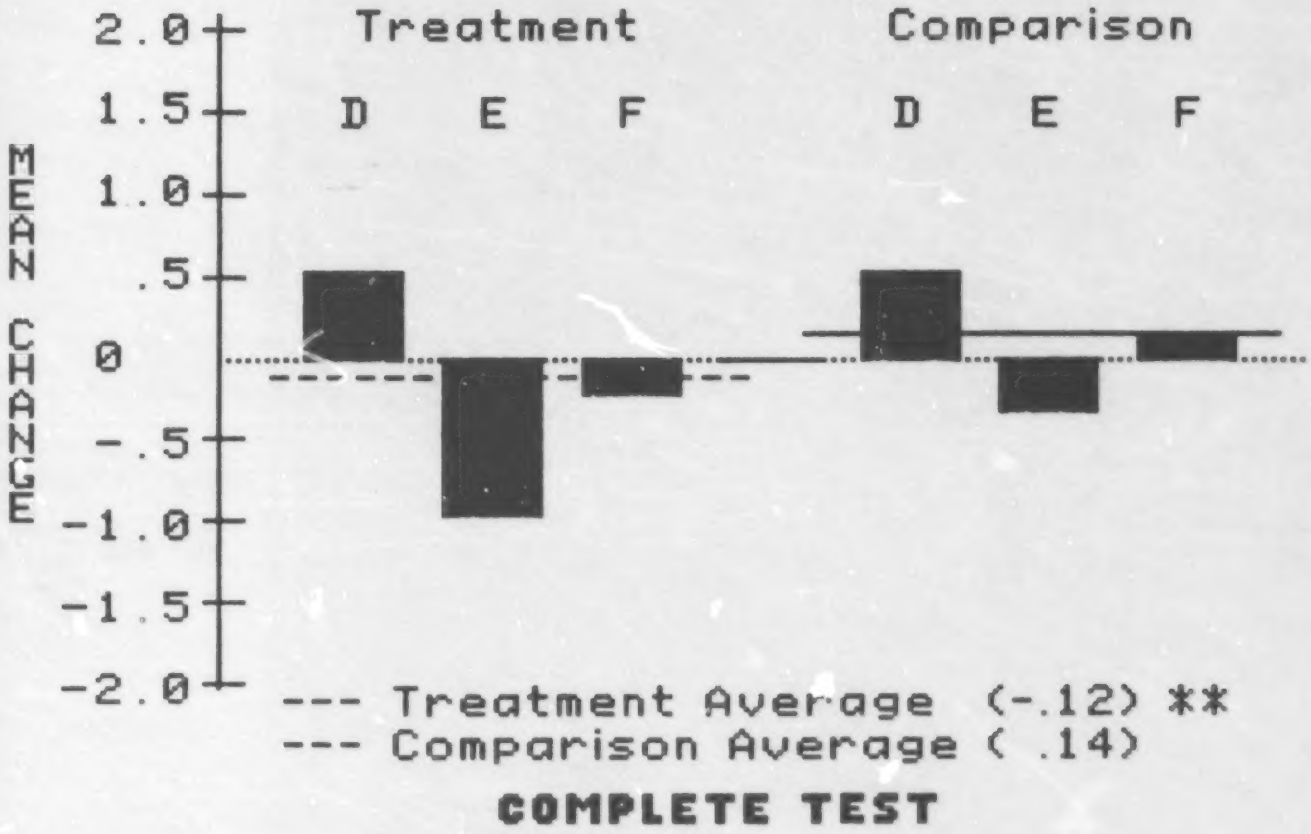
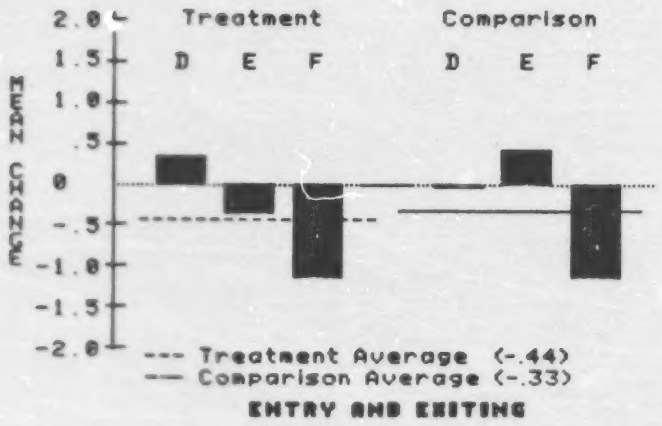
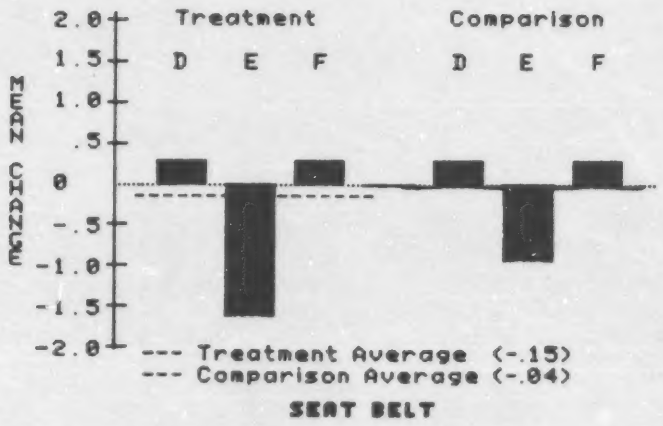


Figure 8. Fifth Grade Mean Change Scores (Curriculum Subtest) by Test Form and Group.





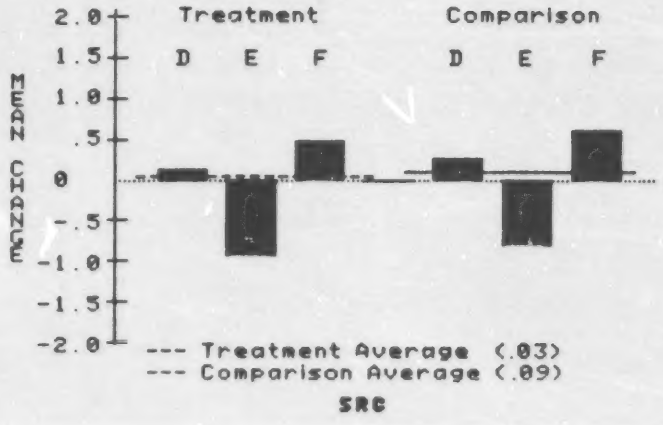
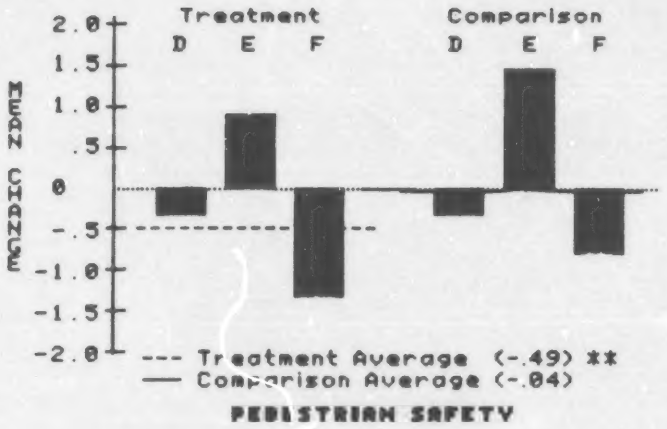
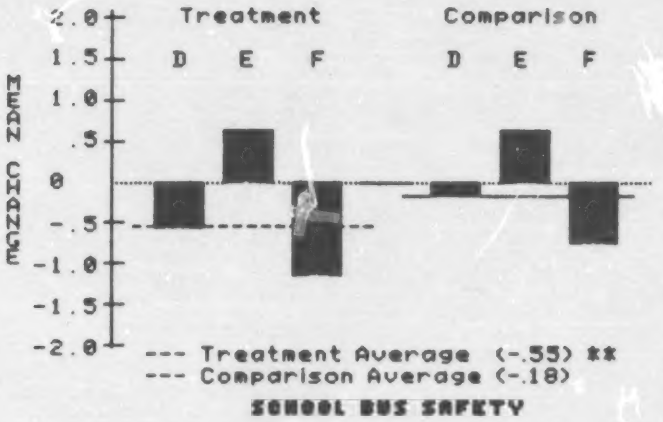


Figure 9. Fifth Grade Mean Change Scores (Non-Curriculum Subtest) by Test Form and Group.





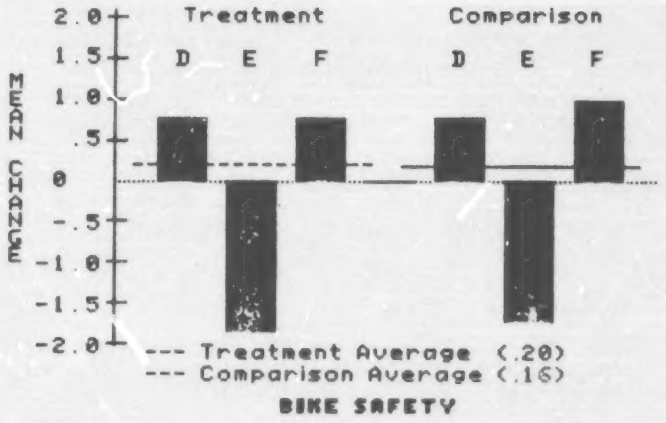


Figure 10. Fifth Grade Mean Change Scores (Complete Test) by School and Group.

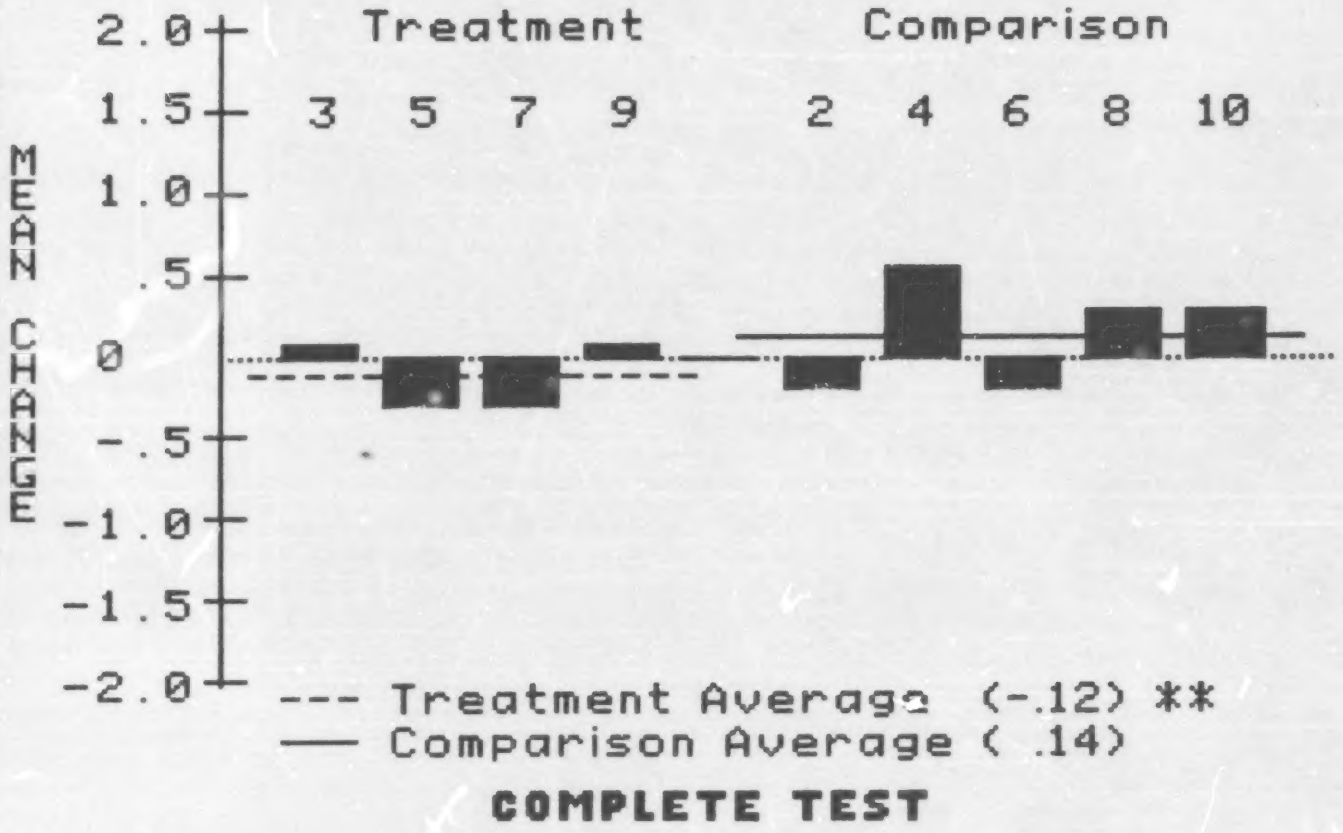
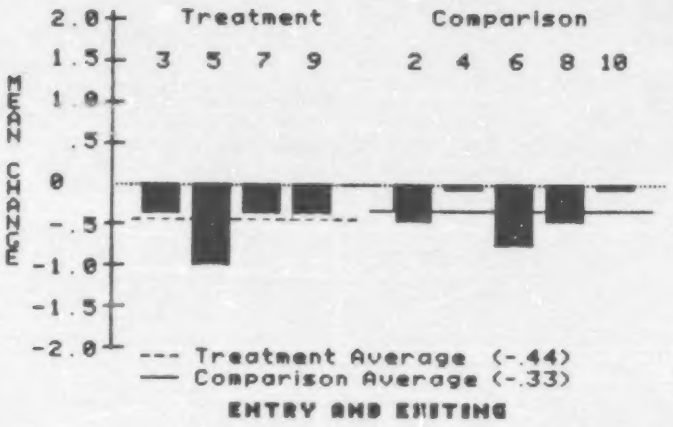
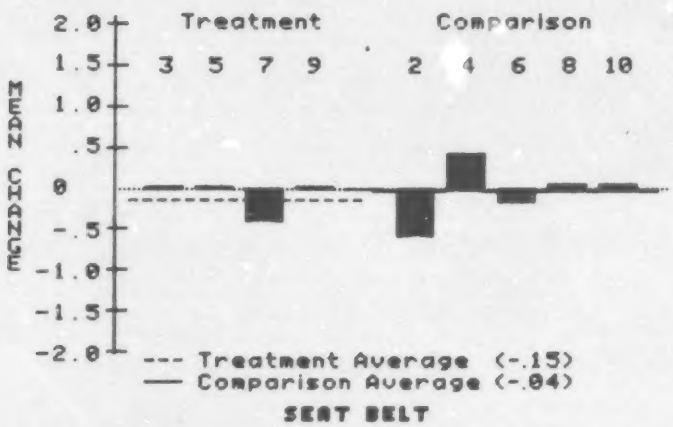


Figure 11. Fifth Grade Mean Change Scores (Curriculum Subtest) by School and Group.





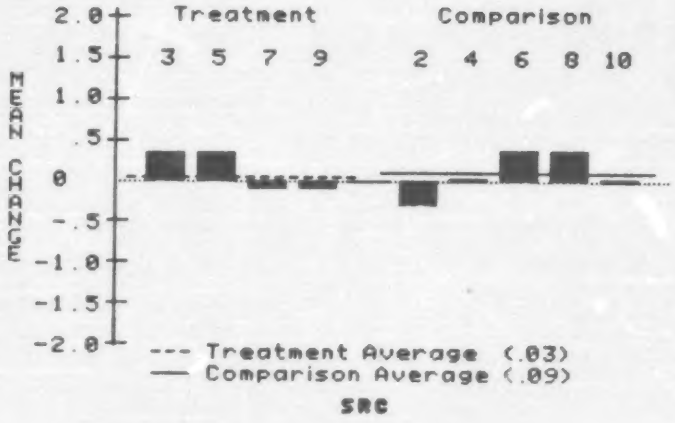
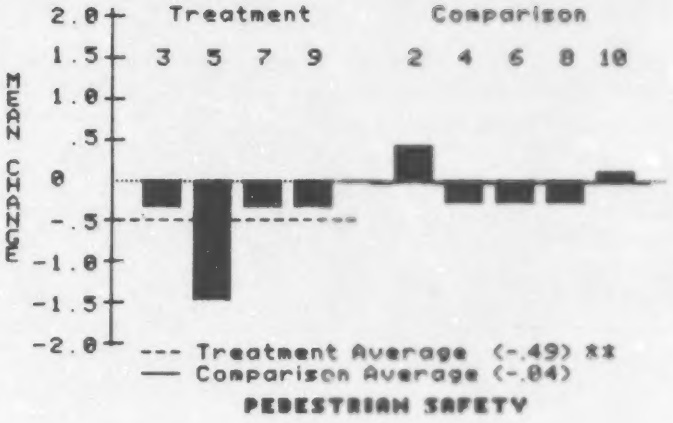
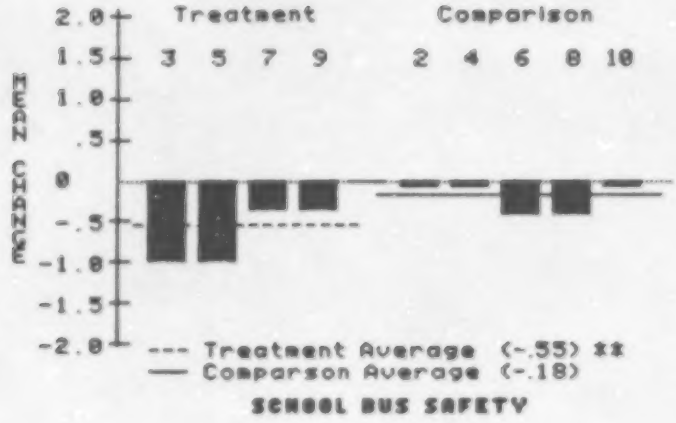
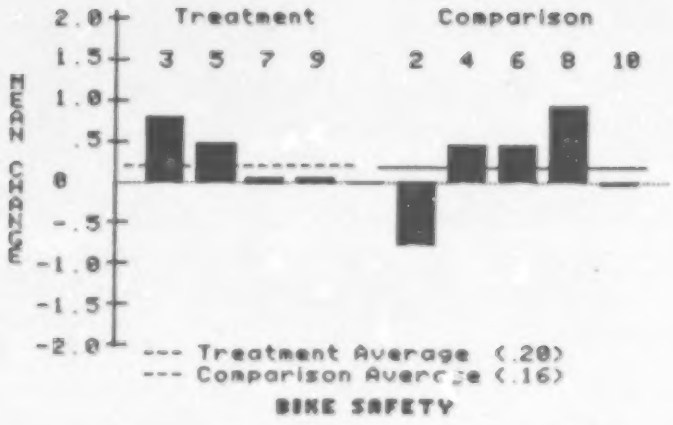


Figure 12. Fifth Grade Mean Change Scores (Non-Curriculum Subtest) by School and Group.







LIST OF APPENDICES

Page

Appendix A
Questionnaire to Schools Concerning Student Characteristics 81

Appendix B
Questiionnaire to Principals Concerning the Curriculum 85

Appendix C
Questionnaire to Teachers Concerning the Curriculum 89

Appendix D
Results of Principal's Questionnaire 113

Appendix E
Results of Teacher's (K-1) Questionnaire 117

Appendix F
Comments From Kindergarten and First Grade 125

Appendix G
Results of Teacher's (2-3) Questionnaire 127

Appendix H
Comments From Second and Third Grades 135

Appendix I
Results of Teacher's (4-6) Questionnaire 137

Appendix J
Comments From Fourth Through Sixth Grades 149

Appendix K
Knowledge Test Forms 151

Appendix L
Coding Form and Rules for Seat Belt Observations 213

APPENDIX A

QUESTIONNAIRE TO SCHOOLS CONCERNING STUDENT CHARACTERISTICS

DEPARTMENT OF PUBLIC INSTRUCTION

STATE OF NORTH CAROLINA RALEIGH

February 4, 1982

FEB 17 1982

Ms. Joann Cooper, Principal
Farmington Woods Elementary School
1413 Hampton Valley Road
Cary, N. C. 27511

Dear Ms. Cooper:

As you may know, motor vehicle injuries are by far the leading cause of death for school-age children in North Carolina. These children are more than fifty times more likely to die from motor vehicle injuries than from all the leading childhood diseases combined!

The North Carolina Department of Public Instruction is responding to this problem by developing a child passenger safety curriculum for grades K-6. The Wake County School System has agreed to participate in the pilot testing of this new program, and we are currently in the process of making final selection of the schools that will be included in the first phase. To do this, we need to obtain certain information from you about your school. Specifically, we need to know the following:

(1) Total number of students in your school:_____

(2) Approximate proportion of students that ride the bus to school:___

(3) Approximate proportion of students that walk to school:_____

(4) Approximate proportion of students that are driven to school by their parents or someone else (that is, they do not ride the bus):

_____

(5) Approximate proportion of student population that is nonwhite:_____

(6) Beginning time for students in the morning:_____

(7) Time students are released in the afternoon:_____

We need to have this information no later than February 22, although we would like to get it sooner if at all possible. We are enclosing a stamped self-addressed envelope for you to use.

We will let you know by March 1 whether your school is among those selected at this time. Even if it is not, we are hopeful that the results of this effort will be made available to all schools at the end of this project.

APPENDIX B

QUESTIONNAIRE TO PRINCIPALS CONCERNING THE CURRICULUM

Questionnaire to Principals Concerning
the K-6 Car Passenger Safety Program

Please Print.

1. Last Name _____

2. First Name _____

3. School _____

4. Grades in your school _____

5. Do you believe the K-6 Car Passenger Safety Curriculum should be incorporated as a permanent part of the school curriculum for each of the following grade levels:

Levels	Yes	No	If no, please explain.
(1) K-1	___	___	_____
			_____
(2) 2-3	___	___	_____
			_____
(3) 4-6	___	___	_____
			_____

6. Did the teachers enter the program with enthusiasm?

(1) None ___

(2) Some ___

(3) Much ___

(4) Very Much ___

7. Were the teachers enthusiastic about the program after several weeks of use?

   (1) None ___

   (2) Some ___

   (3) Much ___

   (4) Very Much ___

8. Do you feel the teachers need some kind of in-service training before teaching the curriculum?

   (1) Yes ___

   (2) No ___

   If yes, please explain.

   _____

   _____

9. Did you have any administrative problems with the K-6 Car Pasenger Safety Program?

   (1) Yes ___

   (2) No ___

   If yes, please explain.

   _____

   _____

10. Please write any changes, suggestions, or comments you have concerning the K-6 Car Passenger Safety Program.

    _____

    _____

    _____

    _____

    _____

APPENDIX C

QUESTIONNAIRE TO TEACHERS CONCERNING THE CURRICULUM

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If you did not use the curriculum this academic year, please mark here and return the questionnaire.

(for Teachers of K-1 grades)

QUESTIONNAIRE TO TEACHERS

CONCERNING

THE K-6 CAR PASSENGER SAFETY CURRICULUM

PLEASE PRINT

1. Name _____

2. School _____

3. Circle grade or grades that you are presently teaching:

K 1 2 3 4 5 6

SECTION I - The Car Passenger Safety Curiculum for Grade Levels _____.

4. Considering everything, please check your overall appraisal of the K-6 Car Passenger Safety Curriculum.

(1) excellent
(2) good
(3) fair
(4) poor

5. To what extent did you use the K-6 Car Passenger Safety Curriculum materials?

(1) not at all
(2) a little
(3) somewhat
(4) considerably

6. In what context were the materials used?

(1) as a separate unit
(2) integrated into existing curriculum
(3) both of the above

7. Did you find using the materials to be:

   (1) very difficult
   (2) somewhat difficult
   (3) reasonable
   (4) easy

8. What changes do you feel would be desirable in the materials, including additions and deletions?
   Please write your comments here:

_____

_____

_____

_____

_____

_____

SECTION II

All of the following deal with the concept of Entering and Exiting the Car Safely.

9. Did you teach the concept of Entering and Exiting the Car Safely?

   (1) yes
   (2) no

   If no, please explain why.

_____

_____

_____

   If yes, please answer questions (10-15).

10. In terms of overall value for car passenger safety education, do you feel the materials in Entering and Exiting the Car Safely for the _____grade level were

   (1) of considerable value
   (2) of moderate value
   (3) of little value
   (4) of no value

11. Were the materials on Entering and Exiting the Car Safely appropriate for the _____ grade level?

    (1) far too difficult
    (2) a little too difficult
    (3) appropriate
    (4) too easy

12. In general, did the students find the materials on Entering and Exiting the Car Safely dull or interesting?

    (1) quite dull
    (2) a little dull
    (3) moderately interesting
    (4) highly interesting

13. What were the most helpful of the materials on Entering and Exiting the Car Safely?

    (1) masters for reproduction
    (2) suggested activities
    (3) concept information

14. What were the least helpful of the materials on Entering and Exiting the Car Safely?

    (1) masters for reproduction
    (2) suggested activities
    (3) concept information

15. If you have any suggestions, including additions or deletions, or comments concerning the materials on Entering and Exiting the Car Safely, please write them in the space provided below.

_____

_____

_____

_____

_____

SECTION III

All of the following questions deal with the concept of the Importance of Wearing Safety Belts.

16. Did you teach the Concept of the Importance of Wearing Safety Belts?

(1) yes
(2) no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (17-22).

17. In terms of overall value for car passenger safety education, do you feel the materials on the Importance of Wearing Safety Belts for the _____ grade level were

(1) of considerable value
(2) of moderate value
(3) of little value
(4) of no value

18. Were the materials on the Importance of Wearing Safety Belts appropriate for the _____grade level?

(1) far too difficult
(2) a little too difficult
(3) appropriate
(4) too easy

19. In general, did the students find the materials on the Importance of Wearing Safety Belts dull or interesting?

(1) quite dull
(2) a little dull
(3) moderately interesting
(4) highly interesting

20. What were the most helpful of the materials on the Importance of Wearing Safety Belts?

(1) masters for reproduction
(2) suggested activities
(3) concept information
(4) films, filmstrips, and games
(5) car and egg demonstration
(6) seatbelt demonstration

21. What were the least helpful of the materials on the importance of Wearing Safety Belts?

(1) masters for reproduction
(2) suggested activities
(3) concept information
(4) films, filmstrips, and games
(5) car and egg demonstration
(6) seatbelt demonstration

22. If you have any suggestions, including additions or deletions, or comments concerning the materials on the Importance of Wearing Safety Belts, please write them in the space provided below.

_____

_____

_____

_____

_____

SECTION IV

All of the following questions deal with the concept of Safe, Responsible and Courteous Passenger Behavior.

23. Did you teach the concept of Safe, Responsible and Courteous Passenger Behavior?

(1) yes
(2) no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (24-29).

24. In terms of overall value for car passenger safety education, do you feel the materials on Safe, Responsible and Courteous Passenger Behavior for the _____grade level were

(1) of considerable value
(2) of moderate value
(3) of little value
(4) of no value

25. Were the materials on Safe, Responsible and Courteous Passenger Behavior appropriate for the _____grade level?

    (1) far too difficult
    (2) a little too difficult
    (3) appropriate
    (4) too easy

26. In general, did the students find the materials on Safe, Responsible and Courteous Passenger Behavior dull or interesting?

    (1) quite dull
    (2) a little dull
    (3) moderately interesting
    (4) highly interesting

27. What were the most helpful of the materials on Safe, Responsible and Courteous Passenger Behavior?

    (1) suggested activities
    (2) concept information

28. What were the least helpful of the materials on Safe, Responsible and Courteous Passenger Behavior?

    (1) suggested activities
    (2) concept information

29. If you have any suggestions, including additions or deletions, or comments concerning the materials on Safe, Responsible and Courteous Passenger Behavior, please write them in the space provided below.

_____

_____

_____

_____

_____

If you did not use the curriculum this academic year, please mark here and return the questionnaire.

(for Teachers of 2-3 grades)

QUESTIONNAIRE TO TEACHERS

CONCERNING

THE K-6 CAR PASSENGER SAFETY CURRICULUM

PLEASE PRINT

1. Name _____

2. School _____

3. Circle grade or grades that you are presently teaching:

K 1 2 3 4 5 6

SECTION I - The Car Passenger Safety Curiculum for Grade Levels _____.

4. Considering everything, please check your overall appraisal of the K-6 Car Passenger Safety Curriculum.

(1) excellent
(2) good
(3) fair
(4) poor

5. To what extent did you use the K-6 Car Passenger Safety Curriculum materials?

(1) not at all
(2) a little
(3) somewhat
(4) considerably

6. In what context were the materials used?

(1) as a separate unit
(2) integrated into existing curriculum
(3) both of the above

7. Did you find using the materials to be:

   (1) very difficult
   (2) somewhat difficult
   (3) reasonable
   (4) easy

8. What changes do you feel would be desirable in the materials, including additions and deletions?
   Please write your comments here:

_____

_____

_____

_____

_____

_____

SECTION II

All of the following deal with the concept of Entering and Exiting the Car.

9. Did you teach the concept of Entering and Exiting the Car?

   (1) yes
   (2) no

   If no, please explain why.

_____

_____

_____

   If yes, please answer questions (10-15).

10. In terms of overall value for car passenger safety education, do you feel the materials in Entering and Exiting the Car for the _____grade level were

    (1) of considerable value
    (2) of moderate value
    (3) of little value
    (4) of no value

11. Were the materials on Entering and Exiting the Car appropriate for the _____ grade level?

    (1) far too difficult
    (2) a little too difficult
    (3) appropriate
    (4) too easy

12. In general, did the students find the materials on Entering and Exiting the Car dull or interesting?

    (1) quite dull
    (2) a little dull
    (3) moderately interesting
    (4) highly interesting

13. What were the most helpful of the materials on Entering and Exiting the Car?

    (1) masters for reproduction
    (2) suggested activities
    (3) concept information

14. What were the least helpful of the materials on Entering and Exiting the Car?

    (1) masters for reproduction
    (2) suggested activities
    (3) concept information

15. If you have any suggestions, including additions or deletions, or comments concerning the materials on Entering and Exiting the Car, please write them in the space provided below.

SECTION III

All of the following questions deal with the concept of Why We Use Safety Belts.

16. Did you teach the Concept of Why We Use Safety Belts?

(1) yes
(2) no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (17-22).

17. In terms of overall value for car passenger safety education, do you feel the materials on Why We Use Safety Belts for the _____ grade level were

(1) of considerable value
(2) of moderate value
(3) of little value
(4) of no value

18. Were the materials on Why We Use Safety Belts appropriate for the _____grade level?

(1) far too difficult
(2) a little too difficult
(3) appropriate
(4) too easy

19. In general, did the students find the materials on Why We Use Safety Belts dull or interesting?

(1) quite dull
(2) a little dull
(3) moderately interesting
(4) highly interesting

20. What were the most helpful of the materials on Why We Use Safety Belts?

(1) masters for reproduction
(2) suggested activities
(3) concept information
(4) films, filmstrips, and games
(5) car and egg demonstration
(6) seatbelt demonstration

21. What were the least helpful of the materials on Why We Use Safety Belts?

(1) masters for reproduction
(2) suggested activities
(3) concept information
(4) films, filmstrips, and games
(5) car and egg demonstration
(6) seatbelt demonstration

22. If you have any suggestions, including additions or deletions, or comments concerning the materials on Why We Use Safety Belts, please write them in the space provided below.

_____

_____

_____

_____

_____

SECTION IV

All of the following questions deal with the concept of Safe and Responsible Behavior While Riding In A Car.

23. Did you teach the concept of Safe and Responsible Behavior While Riding In A Car?

(1) yes
(2) no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (24-29).

24. In terms of overall value for car passenger safety education, do you feel the materials on Safe and Responsible Behavior While Riding In A Car for the _____grade level were

(1) of considerable value
(2) of moderate value
(3) of little value
(4) of no value

25. Were the materials on Safe and Responsible Behavior While Riding In A Car appropriate for the _____grade level?

(1) far too difficult
(2) a little too difficult
(3) appropriate
(4) too easy

26. In general, did the students find the materials on Safe and Responsible Behavior While Riding In A Car dull or interesting?

(1) quite dull
(2) a little dull
(3) moderately interesting
(4) highly interesting

27. What were the most helpful of the materials on Safe and Responsible Behavior While Riding In A Car?

(1) suggested activities
(2) concept information

28. What were the least helpful of the materials on Safe and Responsible Behavior While Riding In A Car?

(1) suggested activities
(2) concept information

29. If you have any suggestions, including additions or deletions, or comments concerning the materials on Safe, Responsible and Courteous Passenger Behavior, please write them in the space provided below.

_____

_____

_____

_____

_____

If you did not use the curriculum this academic year, please mark here and return the questionnaire.

(for Teachers of 4-6 grades)

QUESTIONNAIRE TO TEACHERS

CONCERNING

THE K-6 CAR PASSENGER SAFETY CURRICULUM

PLEASE PRINT

1. Name _____

2. School _____

3. Circle grade or grades that you are presently teaching:

K 1 2 3 4 5 6

SECTION I - The Car Passenger Safety Curiculum for Grade Levels _____.

4. Considering everything, please check your overall appraisal of the K-6 Car Passenger Safety Curriculum.

(1) excellent
(2) good
(3) fair
(4) poor

5. To what extent did you use the K-6 Car Passenger Safety Curriculum materials?

(1) not at all
(2) a little
(3) somewhat
(4) considerably

6. In what context were the materials used?

(1) as a separate unit
(2) integrated into existing curriculum
(3) both of the above

7. Did you find using the materials to be:

   (1) very difficult
   (2) somewhat difficult
   (3) reasonable
   (4) easy

8. What changes do you feel would be desirable in the materials, including additions and deletions?
   Please write your comments here:

_____

_____

_____

_____

_____

_____

SECTION II

All of the following deal with the concept of Entering and Exiting.

9. Did you teach the concept of Entering and Exiting?

   (1) yes
   (2) no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (10-15).

10. In terms of overall value for car passenger safety education, do you feel the materials in Entering and Exiting for the _____grade level were

   (1) of considerable value
   (2) of moderate value
   (3) of little value
   (4) of no value

11. Were the materials on Entering and Exiting appropriate for the _____grade level?

    (1) far too difficult
    (2) a little too difficult
    (3) appropriate
    (4) too easy

12. In general, did the students find the materials on Entering and Exiting dull or interesting?

    (1) quite dull
    (2) a little dull
    (3) moderately interesting
    (4) highly interesting

13. What were the most helpful of the materials on Entering and Exiting?

    (1) masters for reproduction
    (2) suggested activities
    (3) concept information

14. What were the least helpful of the materials on Entering and Exiting?

    (1) masters for reproduction
    (2) suggested activities
    (3) concept information

15. If you have any suggestions, including additions or deletions, or comments concerning the materials on Entering and Exiting, please write them in the space provided below.

SECTION III

All of the following questions deal with the concept of Advantages of Wearing Safety Belts.

16. Did you teach the Concept of Advantages of Wearing Safety Belts?

(1) yes
(2) no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (17-22).

17. In terms of overall value for car passenger safety education, do you feel the materials on Advantages of Wearing Safety Belts for the _____ grade level were

(1) of considerable value
(2) of moderate value
(3) of little value
(4) of no value

18. Were the materials on Advantages of Wearing Safety Belts appropriate for the _____grade level?

(1) far too difficult
(2) a little too difficult
(3) appropriate
(4) too easy

19. In general, did the students find the materials on Advantages of Wearing Safety Belts dull or interesting?

(1) quite dull
(2) a little dull
(3) moderately interesting
(4) highly interesting

20. What were the most helpful of the materials on Advantages of Wearing Safety Belts?

(1) masters for reproduction
(2) suggested activities
(3) concept information
(4) films, filmstrips, and games
(5) car and egg demonstration
(6) seatbelt demonstration

21. What were the least helpful of the materials on Advantages of Wearing Safety Belts?

(1) masters for reproduction
(2) suggested activities
(3) concept information
(4) films, filmstrips, and games
(5) car and egg demonstration
(6) seatbelt demonstration

22. If you have any suggestions, including additions or deletions, or comments concerning the materials on Advantages of Wearing Safety Belts, please write them in the space provided below.

_____

_____

_____

_____

_____

SECTION IV

All of the following questions deal with the concept of Proper Use of Safety Belts.

23. Did you teach the concept of Proper Use of Safety Belts?

(1) yes
(2) no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (24-29).

24. In terms of overall value for car passenger safety education, do you feel the materials on Proper Use of Safety Belts for the _____grade level were

(1) of considerable value
(2) of moderate value
(3) of little value
(4) of no value

25. Were the materials on Proper Use of Safety Belts appropriate for the _____grade level?

(1) far too difficult
(2) a little too difficult
(3) appropriate
(4) too easy

26. In general, did the students find the materials on Proper Use of Safety Belts dull or interesting?

(1) quite dull
(2) a little dull
(3) moderately interesting
(4) highly interesting

27. What were the most helpful of the materials on Proper Use of Safety Belts?

(1) masters for reproduction
(2) suggested activities
(3) concept information

28. What were the least helpful of the materials on Proper Use of Safety Belts?

(1) masters for reproduction
(2) suggested activities
(3) concept information

29. If you have any suggestions, including additions or deletions, or comments concerning the materials on Proper Use of Safety Belts, please write them in the space provided below.

_____

_____

_____

_____

_____

SECTION V

All of the following questions deal with the concept of Riding In The Car.

30. Did you teach the concept of Riding In The Car?

(1) yes
(2) no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (31-36).

31. In terms of overall value for car passenger safety education, do you feel the materials on Riding In The Car for the _____grade level were

    (1) of considerable value
    (2) of moderate value
    (3) of little value
    (4) of no value

32. Were the materials on Riding In The Car appropriate for the _____grade level?

    (1) far too difficult
    (2) a little too difficult
    (3) appropriate
    (4) too easy

33. In general, did the students find the materials on Riding In The Car dull or interesting?

    (1) quite dull
    (2) a little dull
    (3) moderately interesting
    (4) highly interesting

34. What were the most helpful of the materials on Riding In The Car?

    (1) masters for reproduction
    (2) suggested activities
    (3) concept information

35. What were the least helpful of the materials on Riding In The Car?

    (1) masters for reproduction
    (2) suggested activities
    (3) concept information

36. If you have any suggestions, including additions or deletions, or comments concerning the materials on Riding In The Car, please write them in the space provided below.

_____

_____

_____

SECTION VI

All of the following questions deal with the concept of Trip Planning.

37. Did you teach the concept of Trip Planning?

(1) yes
(2) no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (38-43).

38. In terms of overall value for car passenger safety education, do you feel the materials on Trip Planning for the _____grade level were

(1) of considerable value
(2) of moderate value
(3) of little value
(4) of no value

39. Were the materials on Trip Planning appropriate for the _____grade level?

(1) far too difficult
(2) a little too difficult
(3) appropriate
(4) too easy

40. In general, did the students find the materials on Trip Planning dull or interesting?

(1) quite dull
(2) a little dull
(3) moderately interesting
(4) highly interesting

41. What were the most helpful of the materials on Trip Planning?

(1) suggested activities
(2) concept information

42. What were the least helpful of the materials on Trip Planning?

(1) suggested activities
(2) concept information

43. If you have any suggestions, including additions or deletions, or comments concerning the materials on Trip Planning, please write them in the space provided below.

APPENDIX D

RESULTS OF PRINCIPAL'S QUESTIONNAIRE

Questionnaire to Principals Concerning
the K-6 Car Passenger Safety Program

Please Print.

1. Last Name _____

2. First Name _____

3. School _____

4. Grades in your school _____

5. Do you believe the K-6 Car Passenger Safety Curriculum should be incorporated as a permanent part of the school curriculum for each of the following grade levels:

Levels	Yes	No	If no, please explain.
(1) K-1	3	___	_____
(2) 2-3	3	___	_____
(3) 4-6	3	___	_____

6. Did the teachers enter the program with enthusiasm?

(1) None	___
(2) Some	2
(3) Much	1
(4) Very Much	___

7. Were the teachers enthusiastic about the program after several weeks of use?

   (1) None ___
   (2) Some 1
   (3) Much 2
   (4) Very Much ___

8. Do you feel the teachers need some kind of in-service training before teaching the curriculum?

   (1) Yes 2
   (2) No 1

   If yes, please explain.

   _____

   _____

9. Did you have any administrative problems with the K-6 Car Pasenger Safety Program?

   (1) Yes 1
   (2) No 2

   If yes, please explain.

   _____

   _____

10. Please write any changes, suggestions, or comments you have concerning the K-6 Car Passenger Safety Program.

    _____

    _____

    _____

    _____

    _____

APPENDIX E

RESULTS OF TEACHER'S (K-1) QUESTIONNAIRE

If you did not use the curriculum this academic year, please mark here and return the questionnaire.

(for Teachers of K-1 grades)

QUESTIONNAIRE TO TEACHERS

CONCERNING

THE K-6 CAR PASSENGER SAFETY CURRICULUM

PLEASE PRINT

1. Name _____

2. School _____

3. Circle grade or grades that you are presently teaching:

K 1 2 3 4 5 6

SECTION I - The Car Passenger Safety Curiculum for Grade Levels _____.

4. Considering everything, please check your overall appraisal of the K-6 Car Passenger Safety Curriculum.

(19%)	4	(1)	excellent
(71%)	15	(2)	good
(10%)	12	(3)	fair
(0%)	0	(4)	poor

5. To what extent did you use the K-6 Car Passenger Safety Curriculum materials?

(0%)	0	(1)	not at all
(33%)	7	(2)	a little
(38%)	8	(3)	somewhat
(29%)	6	(4)	considerably

6. In what context were the materials used?

(33%)	7	(1)	as a separate unit
(24%)	5	(2)	integrated into existing curriculum
(43%)	9	(3)	both of the above

7. Did you find using the materials to be:

(0%)	0 (1)	very difficult
(5%)	1 (2)	somewhat difficult
(67%)	14 (3)	reasonable
(24%)	5 (4)	easy
(5%)	1 (5)	no answer

8. What changes do you feel would be desirable in the materials, including additions and deletions?
Please write your comments here:

_____

_____

_____

_____

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_____

SECTION II

All of the following deal with the concept of Entering and Exiting the Car Safely.

9. Did you teach the concept of Entering and Exiting the Car Safely?

(100%)	20 (1)	yes
(0%)	0 (2)	no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (10-15).

10. In terms of overall value for car passenger safety education, do you feel the materials in Entering and Exiting the Car Safely for the _____grade level were

(45%)	9 (1)	of considerable value
(50%)	10 (2)	of moderate value
(5%)	1 (3)	of little value
(0%)	0 (4)	of no value

11. Were the materials on Entering and Exiting the Car Safely appropriate for the _____ grade level?

(0%)	0 (1)	far too difficult
(5%)	1 (2)	a little too difficult
(85%)	17 (3)	appropriate
(5%)	1 (4)	too easy
(5%)	1 (5)	no answer

12. In general, did the students find the materials on Entering and Exiting the Car Safely dull or interesting?

(0%)	0 (1)	quite dull
(25%)	5 (2)	a little dull
(40%)	8 (3)	moderately interesting
(30%)	6 (4)	highly interesting
(5%)	1 (5)	no answer

13. What were the most helpful of the materials on Entering and Exiting the Car Safely?

(19%)	4 (1)	masters for reproduction
(52%)	11 (2)	suggested activities
(29%)	6 (3)	concept information

14. What were the least helpful of the materials on Entering and Exiting the Car Safely?

(40%)	8 (1)	masters for reproduction
(15%)	3 (2)	suggested activities
(20%)	4 (3)	concept information
(25%)	5 (4)	no answer

15. If you have any suggestions, including additions or deletions, or comments concerning the materials on Entering and Exiting the Car Safely, please write them in the space provided below.

_____

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_____

SECTION III

All of the following questions deal with the concept of the Importance of Wearing Safety Belts.

16. Did you teach the Concept of the Importance of Wearing Safety Belts?

(100%) 18 (1) yes
(0%) 0 (2) no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (17-22).

17. In terms of overall value for car passenger safety education, do you feel the materials on the Importance of Wearing Safety Belts for the _____ grade level were

(72%) 13 (1) of considerable value
(28%) 5 (2) of moderate value
(0%) 0 (3) of little value
(0%) 0 (4) of no value

18. Were the materials on the Importance of Wearing Safety Belts appropriate for the _____grade level?

(0%) 0 (1) far too difficult
(6%) 1 (2) a little too difficult
(94%) 17 (3) appropriate
(0%) 0 (4) too easy

19. In general, did the students find the materials on the Importance of Wearing Safety Belts dull or interesting?

(0%) 0 (1) quite dull
(11%) 2 (2) a little dull
(56%) 10 (3) moderately interesting
(33%) 6 (4) highly interesting

20. What were the most helpful of the materials on the Importance of Wearing Safety Belts?

(15%) 5 (1) masters for reproduction
(38%) 13 (2) suggested activities
(3%) 1 (3) concept information
(12%) 4 (4) films, filmstrips, and games
(12%) 4 (5) car and egg demonstration
(20%) 7 (6) seatbelt demonstration

21. What were the least helpful of the materials on the importance of Wearing Safety Belts?

(21%)	4 (1)	masters for reproduction
(0%)	0 (2)	suggested activities
(10%)	2 (3)	concept information
(5%)	1 (4)	films, filmstrips, and games
(37%)	7 (5)	car and egg demonstration
(5%)	1 (6)	seatbelt demonstration
(21%)	4 (7)	no answer

22. If you have any suggestions, including additions or deletions, or comments concerning the materials on the Importance of Wearing Safety Belts, please write them in the space provided below.

_____

_____

_____

_____

_____

SECTION IV

All of the following questions deal with the concept of Safe, Responsible and Courteous Passenger Behavior.

23. Did you teach the concept of Safe, Responsible and Courteous Passenger Behavior?

(94%)	17 (1)	yes
(6%)	1 (2)	no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (24-29).

24. In terms of overall value for car passenger safety education, do you feel the materials on Safe, Responsible and Courteous Passenger Behavior for the _____grade level were

(41%)	7 (1)	of considerable value
(53%)	9 (2)	of moderate value
(6%)	1 (3)	of little value
(0%)	0 (4)	of no value

25. Were the materials on Safe, Responsible and Courteous Passenger Behavior appropriate for the _____grade level?

(0%)	0 (1)	far too difficult
(0%)	0 (2)	a little too difficult
(94%)	16 (3)	appropriate
(6%)	1 (4)	too easy

26. In general, did the students find the materials on Safe, Responsible and Courteous Passenger Behavior dull or interesting?

(0%)	0 (1)	quite dull
(12%)	2 (2)	a little dull
(76%)	13 (3)	moderately interesting
(12%)	2 (4)	highly interesting

27. What were the most helpful of the materials on Safe, Responsible and Courteous Passenger Behavior?

(68%)	13 (1)	suggested activities
(32%)	6 (2)	concept information

28. What were the least helpful of the materials on Safe, Responsible and Courteous Passenger Behavior?

(24%)	4 (1)	suggested activities
(41%)	7 (2)	concept information
(35%)	6 (3)	no answer

29. If you have any suggestions, including additions or deletions, or comments concerning the materials on Safe, Responsible and Courteous Passenger Behavior, please write them in the space provided below.

_____

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APPENDIX F

COMMENTS FROM KINDERGARTEN AND FIRST GRADE

COMMENTS TO QUESTION #8: What changes do you feel would be desirable in the materials, including additions and deletions?

-simpler activities
-teach curriculum in the fall with other school safety topics
-more activities and songs for kindergarten
-have film strip on safety belt for younger children
-have safety belt for school use
-materials too difficult for kindergarten
-more booklets and pamphlets for first graders to read themselves
-good and easy to use curriculum
-more audiovisuals
-more concrete materials for unit on car safety

COMMENTS TO QUESTION #15: If you have any suggestions, including additions or deletions, or comments concerning the materials on Entering and Exiting the car Safely, please write them in the space provided below

-all materials were good
-safety belt topic is very good
-I used the materials in conjunction with the Beltman kit
-Entering and Exiting is a dull topic

COMMENTS TO QUESTION #22: If you have any suggestions, including additions or deletions, or comments concerning the materials on the Importance of Wearing Safety Belts, please write them in the space provided below

-more audiovisuals for young children on importance of wearing safety belts

COMMENTS TO QUESTION #23: Please explain why you did not teach the concept of Safe, Responsible and Courteous Passenger Behavior

-covered by the Bus Safety lessons

COMMENTS TO QUESTION #29: If you have any suggestions, including additions or deletions, or comments concerning the materials on Safe, Responsible and Courteous Passenger Behavior, please write them in the space provided below

-good materials, can be used all year long

RESULTS OF TEACHER'S (2-3) QUESTIONNAIRE

If you did not use the curriculum this academic year, please mark here and return the questionnaire.

(for Teachers of 2-3 grades)

QUESTIONNAIRE TO TEACHERS

CONCERNING

THE K-6 CAR PASSENGER SAFETY CURRICULUM

PLEASE PRINT

1. Name _____

2. School _____

3. Circle grade or grades that you are presently teaching:

K 1 2 3 4 5 6

SECTION I - The Car Passenger Safety Curiculum for Grade Levels _____.

4. Considering everything, please check your overall appraisal of the K-6 Car Passenger Safety Curriculum.

(32%)	7 (1)	excellent
(59%)	13 (2)	good
(9%)	2 (3)	fair
(0%)	0 (4)	poor

5. To what extent did you use the K-6 Car Passenger Safety Curriculum materials?

(0%)	0 (1)	not at all
(18%)	4 (2)	a little
(27%)	6 (3)	somewhat
(55%)	12 (4)	considerably

6. In what context were the materials used?

(32%)	7 (1)	as a separate unit
(14%)	3 (2)	integrated into existing curriculum
(55%)	12 (3)	both of the above

7. Did you find using the materials to be:

(0%)	0 (1)	very difficult
(5%)	1 (2)	somewhat difficult
(73%)	16 (3)	reasonable
(23%)	5 (4)	easy

8. What changes do you feel would be desirable in the materials, including additions and deletions?
Please write your comments here:

_____

_____

_____

_____

_____

_____

SECTION II

All of the following deal with the concept of Entering and Exiting the Car.

9. Did you teach the concept of Entering and Exiting the Car?

(95%)	21 (1)	yes
(5%)	1 (2)	no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (10-15).

10. In terms of overall value for car passenger safety education, do you feel the materials in Entering and Exiting the Car for the _____grade level were

(76%)	16 (1)	of considerable value
(24%)	5 (2)	of moderate value
(0%)	0 (3)	of little value
(0%)	0 (4)	of no value

11. Were the materials on Entering and Exiting the Car appropriate for the _____ grade level?

(0%)	0 (1)	far too difficult
(0%)	0 (2)	a little too difficult
(95%)	20 (3)	appropriate
(5%)	1 (4)	too easy

12. In general, did the students find the materials on Entering and Exiting the Car dull or interesting?

(0%)	0 (1)	quite dull
(5%)	1 (2)	a little dull
(71%)	15 (3)	moderately interesting
(24%)	5 (4)	highly interesting

13. What were the most helpful of the materials on Entering and Exiting the Car?

(14%)	3 (1)	masters for reproduction
(48%)	10 (2)	suggested activities
(38%)	8 (3)	concept information

14. What were the least helpful of the materials on Entering and Exiting the Car?

(52%)	11 (1)	masters for reproduction
(14%)	3 (2)	suggested activities
(14%)	3 (3)	concept information
(19%)	4 (4)	no answer

15. If you have any suggestions, including additions or deletions, or comments concerning the materials on Entering and Exiting the Car, please write them in the space provided below.

SECTION III

All of the following questions deal with the concept of Why We Use Safety Belts.

16. Did you teach the Concept of Why We Use Safety Belts?

(100%) 21 (1) yes
(0%) 0 (2) no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (17-22).

17. In terms of overall value for car passenger safety education, do you feel the materials on Why We Use Safety Belts for the _____ grade level were

(76%) 16 (1) of considerable value
(24%) 5 (2) of moderate value
(0%) 0 (3) of little value
(0%) 0 (4) of no value

18. Were the materials on Why We Use Safety Belts appropriate for the _____grade level?

(0%) 0 (1) far too difficult
(0%) 0 (2) a little too difficult
(95%) 20 (3) appropriate
(5%) 1 (4) too easy

19. In general, did the students find the materials on Why We Use Safety Belts dull or interesting?

(0%) 0 (1) quite dull
(10%) 2 (2) a little dull
(57%) 12 (3) moderately interesting
(33%) 7 (4) highly interesting

20. What were the most helpful of the materials on Why We Use Safety Belts?

(13%) 5 (1) masters for reproduction
(23%) 9 (2) suggested activities
(10%) 4 (3) concept information
(18%) 7 (4) films, filmstrips, and games
(13%) 5 (5) car and egg demonstration
(23%) 9 (6) seatbelt demonstration

21. What were the least helpful of the materials on Why We Use Safety Belts?

(38%)	8 (1)	masters for reproduction
(5%)	1 (2)	suggested activities
(0%)	0 (3)	concept information
(0%)	0 (4)	films, filmstrips, and games
(19%)	4 (5)	car and egg demonstration
(19%)	4 (6)	seatbelt demonstration
(19%)	4 (7)	no answer

22. If you have any suggestions, including additions or deletions, or comments concerning the materials on Why We Use Safety Belts, please write them in the space provided below.

_____

_____

_____

_____

_____

SECTION IV

All of the following questions deal with the concept of Safe and Responsible Behavior While Riding In A Car.

23. Did you teach the concept of Safe and Responsible Behavior While Riding In A Car?

(90%)	19 (1)	yes
(10%)	2 (2)	no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (24-29).

24. In terms of overall value for car passenger safety education, do you feel the materials on Safe and Responsible Behavior While Riding In A Car for the _____grade level were

(74%)	14 (1)	of considerable value
(26%)	5 (2)	of moderate value
(0%)	0 (3)	of little value
(0%)	0 (4)	of no value

25. Were the materials on Safe and Responsible Behavior While Riding In A Car appropriate for the _____grade level?

(0%)	0	(1)	far too difficult
(0%)	0	(2)	a little too difficult
(89%)	17	(3)	appropriate
(5%)	1	(4)	too easy
(5%)	1	(5)	no answer

26. In general, did the students find the materials on Safe and Responsible Behavior While Riding In A Car dull or interesting?

(0%)	0	(1)	quite dull
(11%)	2	(2)	a little dull
(37%)	7	(3)	moderately interesting
(53%)	0	(4)	highly interesting

27. What were the most helpful of the materials on Safe and Responsible Behavior While Riding In A Car?

(48%)	10	(1)	suggested activities
(52%)	11	(2)	concept information

28. What were the least helpful of the materials on Safe and Responsible Behavior While Riding In A Car?

(53%)	10	(1)	suggested activities
(32%)	6	(2)	concept information
(16%)	3	(3)	no answer

29. If you have any suggestions, including additions or deletions, or comments concerning the materials on Safe, Responsible and Courteous Passenger Behavior, please write them in the space provided below.

_____

_____

_____

_____

_____

APPENDIX H

COMMENTS FROM SECOND AND THIRD GRADES

COMMENTS TO QUESTION #8: What changes do you feel would be desirable in the materials, including additions and deletions?

-masters are too easy
-more materials
-all materials on the test need to be covered
-more film strips
-more audiovisuals
-curriculum good as is
-no changes needed
-more activities for k-2 level
-good materials (2)
-too easy
-test items not good and not always related to the text

COMMENTS TO QUESTION #15: If you have any suggestions, including additions or deletions, or comments concerning the materials on Entering and Exiting the Car, please write them in the space provided below

-children prefer "actual" in car demonstrations and not substitutes
-information was very helpful
-good materials
-use large posters rather than masters
-simpler pictures were good

COMMENTS TO QUESTION #22: If you have any suggestions, including additions or deletions, or comments concerning the materials on Why We Use Safety Belts, please write them in the space provided below

-films showing consequences of not wearing belts, role playing and actual demonstrations were good
-send films with unit
-children liked big coloring chart (2)
-like another large poster and use stars to indicate places where sudden stops might occur

COMMENTS TO QUESTION #29: If you have any suggestions, including additions or deletions, or comments concerning the materials on Safe, Responsible and Courteous Passenger Behavior, please write them in the space provided below

-some materials on the test were not covered by the curriculum
-loved the program

OTHER COMMENTS:

-enjoyed using the materials
-tests not matched to curriculum

APPENDIX I

RESULTS OF TEACHER'S (4-6) QUESTIONNAIRE

If you did not use the curriculum this academic year, please mark here and return the questionnaire.

(for Teachers of 4-6 grades)

QUESTIONNAIRE TO TEACHERS

CONCERNING

THE K-6 CAR PASSENGER SAFETY CURRICULUM

PLEASE PRINT

1. Name _____

2. School _____

3. Circle grade or grades that you are presently teaching:

K 1 2 3 4 5 6

SECTION I - The Car Passenger Safety Curiculum for Grade Levels _____.

4. Considering everything, please check your overall appraisal of the K-6 Car Passenger Safety Curriculum.

(59%)	10 (1)	excellent
(35%)	6 (2)	good
(6%)	1 (3)	fair
(0%)	0 (4)	poor

5. To what extent did you use the K-6 Car Passenger Safety Curriculum materials?

(0%)	0 (1)	not at all
(12%)	2 (2)	a little
(29%)	5 (3)	somewhat
(59%)	10 (4)	considerably

6. In what context were the materials used?

(29%)	5 (1)	as a separate unit
(24%)	4 (2)	integrated into existing curriculum
(47%)	8 (3)	both of the above

7. Did you find using the materials to be:

(0%)	0 (1)	very difficult
(0%)	0 (2)	somewhat difficult
(67%)	10 (3)	reasonable
(33%)	5 (4)	easy

8. What changes do you feel would be desirable in the materials, including additions and deletions?
Please write your comments here:

_____

_____

_____

_____

_____

_____

SECTION II

All of the following deal with the concept of Entering and Exiting.

9. Did you teach the concept of Entering and Exiting?

(93%)	14 (1)	yes
(7%)	1 (2)	no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (10-15).

10. In terms of overall value for car passenger safety education, do you feel the materials in Entering and Exiting for the _____grade level were

(57%)	8 (1)	of considerable value
(36%)	5 (2)	of moderate value
(7%)	1 (3)	of little value
(0%)	0 (4)	of no value

11. Were the materials on Entering and Exiting appropriate for the _____grade level?

(0%)	0 (1)	far too difficult
(6%)	1 (2)	a little too difficult
(69%)	11 (3)	appropriate
(19%)	3 (4)	too easy
(6%)	1 (5)	no answer

12. In general, did the students find the materials on Entering and Exiting dull or interesting?

(6%)	1 (1)	quite dull
(12%)	2 (2)	a little dull
(69%)	11 (3)	moderately interesting
(12%)	2 (4)	highly interesting

13. What were the most helpful of the materials on Entering and Exiting?

(17%)	3 (1)	masters for reproduction
(44%)	8 (2)	suggested activities
(39%)	7 (3)	concept information

14. What were the least helpful of the materials on Entering and Exiting?

(29%)	5 (1)	masters for reproduction
(24%)	4 (2)	suggested activities
(18%)	3 (3)	concept information
(29%)	5 (4)	no answer

15. If you have any suggestions, including additions or deletions, or comments concerning the materials on Entering and Exiting, please write them in the space provided below.

_____

_____

_____

_____

_____

SECTION III

All of the following questions deal with the concept of Advantages of Wearing Safety Belts.

16. Did you teach the Concept of Advantages of Wearing Safety Belts?

(100%) 15 (1) yes
(0%) 0 (2) no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (17-22).

17. In terms of overall value for car passenger safety education, do you feel the materials on Advantages of Wearing Safety Belts for the _____ grade level were

(73%) 11 (1) of considerable value
(27%) 4 (2) of moderate value
(0%) 0 (3) of little value
(0%) 0 (4) of no value

18. Were the materials on Advantages of Wearing Safety Belts appropriate for the _____grade level?

(0%) 0 (1) far too difficult
(0%) 0 (2) a little too difficult
(87%) 13 (3) appropriate
(13%) 2 (4) too easy

19. In general, did the students find the materials on Advantages of Wearing Safety Belts dull or interesting?

(0%) 0 (1) quite dull
(0%) 0 (2) a little dull
(67%) 10 (3) moderately interesting
(33%) 5 (4) highly interesting

20. What were the most helpful of the materials on Advantages of Wearing Safety Belts?

(17%) 6 (1) masters for reproduction
(26%) 9 (2) suggested activities
(23%) 8 (3) concept information
(11%) 4 (4) films, filmstrips, and games
(14%) 5 (5) car and egg demonstration
(9%) 3 (6) seatbelt demonstration

21. What were the least helpful of the materials on Advantages of Wearing Safety Belts?

(21%)	4 (1)	masters for reproduction
(0%)	0 (2)	suggested activities
(5%)	1 (3)	concept information
(10%)	2 (4)	films filmstrips, and games
(16%)	3 (5)	car and egg demonstration
(26%)	5 (6)	seatbelt demonstration
(21%)	4 (7)	no answer

22. If you have any suggestions, including additions or deletions, or comments concerning the materials on Advantages of Wearing Safety Belts, please write them in the space provided below.

_____

_____

_____

_____

_____

SECTION IV

All of the following questions deal with the concept of Proper Use of Safety Belts.

23. Did you teach the concept of Proper Use of Safety Belts?

(100%)	14 (1)	yes
(0%)	0 (2)	no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (24-29).

24. In terms of overall value for car passenger safety education, do you feel the materials on Proper Use of Safety Belts for the _____grade level were

(50%)	7 (1)	of considerable value
(50%)	7 (2)	of moderate value
(0%)	0 (3)	of little value
(0%)	0 (4)	of no value

25. Were the materials on Proper Use of Safety Belts appropriate for the _____grade level?

(0%)	0 (1)	far too difficult
(0%)	0 (2)	a little too difficult
(79%)	11 (3)	appropriate
(21%)	3 (4)	too easy

26. In general, did the students find the materials on Proper Use of Safety Belts dull or interesting?

(0%)	0 (1)	quite dull
(21%)	3 (2)	a little dull
(57%)	8 (3)	moderately interesting
(21%)	3 (4)	highly interesting

27. What were the most helpful of the materials on Proper Use of Safety Belts?

(23%)	5 (1)	masters for reproduction
(50%)	11 (2)	suggested activities
(27%)	6 (3)	concept information

28. What were the least helpful of the materials on Proper Use of Safety Belts?

(43%)	6 (1)	masters for reproduction
(7%)	1 (2)	suggested activities
(14%)	2 (3)	concept information
(36%)	5 (4)	no answer

29. If you have any suggestions, including additions or deletions, or comments concerning the materials on Proper Use of Safety Belts, please write them in the space provided below.

_____

_____

_____

_____

_____

SECTION V

All of the following questions deal with the concept of Riding In The Car

30. Did you teach the concept of Riding In The Car?

(86%)	12 (1)	yes
(14%)	2 (2)	no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (31-36).

31. In terms of overall value for car passenger safety education, do you feel the materials on Riding In The Car for the _____grade level were

(50%)	6 (1)	of considerable value
(42%)	5 (2)	of moderate value
(8%)	1 (3)	of little value
(0%)	0 (4)	of no value

32. Were the materials on Riding In The Car appropriate for the _____grade level?

(0%)	0 (1)	far too difficult
(0%)	0 (2)	a little too difficult
(67%)	8 (3)	appropriate
(33%)	4 (4)	too easy

33. In general, did the students find the materials on Riding In The Car dull or interesting?

(0%)	0 (1)	quite dull
(33%)	4 (2)	a little dull
(42%)	5 (3)	moderately interesting
(25%)	3 (4)	highly interesting

34. What were the most helpful of the materials on Riding In The Car?

(21%)	4 (1)	masters for reproduction
(53%)	10 (2)	suggested activities
(26%)	5 (3)	concept information

35. What were the least helpful of the materials on Riding In The Car?

(17%)	2 (1)	masters for reproduction
(8%)	1 (2)	suggested activities
(8%)	1 (3)	concept information
(67%)	8 (4)	no answer

36. If you have any suggestions, including additions or deletions, or comments concerning the materials on Riding In The Car, please write them in the space provided below.

_____

_____

_____

SECTION VI
All of the following questions deal with the concept of Trip Planning.

37. Did you teach the concept of Trip Planning?

(43%)	6 (1)	yes
(57%)	8 (2)	no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (38-43).

38. In terms of overall value for car passenger safety education, do you feel the materials on Trip Planning for the _____grade level were

(33%)	2 (1)	of considerable value
(50%)	3 (2)	of moderate value
(17%)	1 (3)	of little value
(0%)	0 (4)	of no value

39. Were the materials on Trip Planning appropriate for the _____grade level?

(17%)	1 (1)	far too difficult
(0%)	0 (2)	a little too difficult
(67%)	4 (3)	appropriate
(17%)	1 (4)	too easy

40. In general, did the students find the materials on Trip Planning dull or interesting?

(0%)	0 (1)	quite dull
(50%)	3 (2)	a little dull
(50%)	3 (3)	moderately interesting
(0%)	0 (4)	highly interesting

41. What were the most helpful of the materials on Trip Planning?

(100%)	6 (1)	suggested activities
(0%)	0 (2)	concept information

42. What were the least helpful of the materials on Trip Planning?

(14%)	1 (1)	suggested activities
(57%)	4 (2)	concept information
(29%)	2 (3)	no answer

43. If you have any suggestions, including additions or deletions, or comments concerning the materials on Trip Planning, please write them in the space provided below.

APPENDIX J

COMMENTS FROM FOURTH THROUGH SIXTH GRADES

COMMENTS TO QUESTION #8: What changes do you feel would be desirable in the materials, including additions and deletions

-would have benefited from more actual problem situations and how to handle ...
-suggestions for role playing experiences
-more fact-myth situations
-children enjoyed composing songs
-a "rules" mural with illustrations was done by class that was helpful--visualizing steps for entering and exiting
-too easy for the intermediate child
-activities should be arranged by grade level
-day by day lesson plans
-more materials, films and worksheets

COMMENT TO QUESTION #9: Please explain the reason for not teaching the concept of Entering and Exiting

-knew it already in grade 5

COMMENTS TO QUESTION #15: If you have any suggestions, including additions or deletions, or comments concerning the materials on Entering and Exiting, please write them in the space provided below

-some of fact-myth situations not too clear
-idea suggestions would help with usage of wall mural given in packet
-children enjoyed setting up "Safety Town" model and showing "safety" and "danger" situations
-More advance work needed

COMMENTS TO QUESTION #22: If you have any suggestions, including additions or deletions, or comments concerning the materials on Advantages of Wearing Safety Belts, please write them in the space provided below

-had a song contest (to well known nursery rhyme tones) which stimulated lots of participation and enthusiasm

COMMENTS TO QUESTION #29: If you have any suggestions, including additions or deletions, or comments concerning the materials on Proper Use of Safety Belts, please write them in the space provided below

-more visual aids would have been helpful or suggestions on seat belt "construction" so each child could handle and analyze seat belt and its proper positioning
-filmstrip of this feature in unit would help here
-graphing survey results would give good math correlation
-children are too mature for some of the activities

COMMENT TO QUESTION #30: Please explain the reason for not teaching the concept of Riding In The Car

-not enough time (3)

COMMENTS TO QUESTION #36: If you have any suggestions, including additions or deletions, or comments concerning the materials on Riding In The Car, please write them in the space provided below

-children enjoyed performing "playlets" in booklets
-appropriate stories (by grade level) would be interesting
-children wrote many stories to share

COMMENTS TO QUESTION #37: Please explain the reason for not teaching the concept of Trip Planning

-not enough time to do this section (8)
-used with a map reading activity
-time limited usage of this part even material seemed appropriate and interesting

COMMENTS TO QUESTION #43: If you have any suggestions, including additions or deletions, or comments concerning the materials on Trip Planning, please write them in the space provided below

-haven't covered all activities (sections) yet

APPENDIX K

KNOWLEDGE TEST FORMS

School_____

Teacher_____

Student Name_____

Third Grade Knowledge Test

Form A

1. If you must stand on the school bus, you should hold your books firmly in your arms.

T F

2. Safety belts can keep many people from getting killed or hurt in car accidents.

T F

3. The only time a person should walk on the road or in the street is to cross the street.

T F

4. When a car stops suddenly, people in the car stop moving after the car does.

T F

5. It is safe for parents to hold a baby in their arms while riding in a car.

T F

6. Fastening safety belts should be one of the things to do before driving off.

T F

7. People who are noisy in the car can bother the driver and may cause him to have an accident.

T F

A - Page 2

8. It is best to cross the street only at intersections or crosswalks.

T F

9. When riding a bicycle, both hands should be on the handlebars except when giving a hand signal to turn.

T F

10. Babies should ride in their special seats turned backwards in the car.

T F

11. The shoulder harness part of the safety belt should be worn only when it does not come across the neck.

T F

12. A bicyclist should ride on the left side of the road facing traffic.

T F

13. The driver should let the people riding in the car decide whether they want to use safety belts, and not ask them to please wear the belts.

T F

14. A person wearing bright-colored clothing <u>cannot</u> be seen very well at night if he or she is walking.

T F

15. You should cross at least twelve feet in front of the school bus.

T F

16. Bicycles are harder to control than cars.

T F

A - Page 3

17. After you get out of a car, it is better to walk in front of the car instead of behind it.

T F

18. Books should be put in the back of the car, in the rear window deck.

T F

19. Whenever you can, you should get out of a car on the side that is nearest the curb.

T F

20. You should use the handrail when you get on and off the school bus.

T F

School_____

Teacher_____

Student Name_____

Third Grade Knowledge Test

Form B

1. Windows should be rolled down all the way to get enough air inside the car.

T F

2. A person should walk on the left side of the road, facing traffic.

T F

3. People usually do not have very good reasons for not wearing safety belts.

T F

4. Cracks in the pavement can throw a bicyclist off balance.

T F

5. When a car stops suddenly, all the people in the car stop at the same time the car does.

T F

6. The safest place for a baby to ride is in a special car seat.

T F

7. Safety belts should be worn low around the hips.

T F

8. Every person who walks from one place to another is called a pedestrian.

T F

B - Page 2

9. On long trips, it is better to let children sleep in the back of a station wagon.

T F

10. After getting out of the car, you should walk to the nearest intersection to cross the street.

T F

11. A bicyclist should use hand signals for turning, slowing down, and stopping.

T F

12. Putting too many things in a car to take on vacation is not safe.

T F

13. Bicyclists must obey traffic signs.

T F

14. The driver should let the people riding in the car decide whether they want to buckle up.

T F

15. The older children should get on the school bus first.

T F

16. The children on a school bus could cause the driver to have an accident.

T F

17. If you must stand on a school bus, you should hold onto the back of two seats.

T F

B - Page 3

18. You should get into a car from the side which is closest to you.

T F

19. In a car accident, you are less likely to be hurt if you are wearing a a safety belt.

T F

20. A person walking can put complete trust in the traffic light when deciding whether it is safe to cross the street.

T F

BLANK PAGE

School_____

Teacher_____

Student Name_____

Third Grade Knowledge Test

Form C

1. Safety belts will keep you from being thrown around in the car if it stops suddenly.

T F

2. Children who weigh less than 40 pounds should wear lap belts when riding in a car.

T F

3. After getting out of a car, you should cross the street at once.

T F

4. At intersections you should ride the bike across the street.

T F

5. To be safe while riding in a car, you should keep your head, arms, and legs inside the windows.

T F

6. The driver is responsible for the safety of all the people in the car.

T F

7. You should talk to the school bus driver to help keep him alert.

T F

8. It is not safe to eat lollipops or popsicles while riding in a car.

T F

C - Page 2

9. To be safe, a person walking depends a lot on how well he hears.

T F

10. When there is no sidewalk, a person should walk on the left side of the road, facing traffic.

T F

11. A bicycle is a vehicle because it is a machine used for moving people.

T F

12. You should not walk towards the school bus while it is pulling up to the stop.

T F

13. In an emergency, the people in the seats nearest the door of the school bus should start out first.

T F

14. To jaywalk means to cross the street at the intersection with white lines marking where to walk.

T F

15. It is better to wear the safety belt real loose so you can move around more easily in your seat.

T F

16. In a moving car, people in the car move forward along with the car.

T F

17. One thing wrong with wearing safety belts is that they will keep you from getting out of a car that catches on fire.

T F

18. You do not need to wear safety belts when you are only riding around town.

T F

19. To signal a right turn, a bicyclist puts his left arm and hand straight out.

T F

20. It is a good habit to keep the doors locked while riding in a car.

T F

School_____

Teacher_____

Student Name_____

Fifth Grade Knowledge Test

Form D

1. If you must stand on the school bus, you should hold your books firmly in your arms.

T F

2. Safety belts can keep many people from getting killed or hurt in car accidents.

T F

3. Lap belts should fit snugly across the stomach.

T F

4. The only time a person should walk on the road or in the street is to cross the street.

T F

5. Government never has any right to tell people what to do with their own lives.

T F

6. When a car stops suddenly, people in the car stop moving after the car does.

T F

7. It is safe for parents to hold a baby in their arms while riding in a car.

T F

D - Page 2

8. Fastening safety belts should be one of the things to do before driving off.

T F

9. People who are noisy in the car can bother the driver and may cause him to have an accident.

T F

10. It is best to cross the street only at intersections or crosswalks.

T F

11. If you must get out of a car on the street side, you should first check to see if any cars are coming.

T F

12. When riding a bicycle, both hands should be on the handlebars except when giving a hand signal to turn.

T F

13. After a crash, you are more likely to get burned if you are wearing safety belts and your car catches fire.

T F

14. Babies should ride in their special seats turned backwards in the car.

T F

15. The shoulder harness part of the safety belt should be worn only when it does not come across the neck.

T F

16. A bicyclist should ride on the left side of the road facing traffic.

T F

D - Page 3

17. The driver should let the people riding in the car decide whether they want to use safety belts, and not ask them to please wear the belts.

T F

18. A person wearing bright-colored clothing cannot be seen very well at night if he or she is walking.

T F

19. You should cross at least twelve feet in front of the school bus.

T F

20. Bicycles are harder to control than cars.

T F

21. After you get out of a car, it is better to walk in front of the car instead of behind it.

T F

22. Books should be put in the back of the car, in the rear window deck.

T F

23. Whenever you can, you should get out of a car on the side that is nearest the curb.

T F

24. A driver can control the car better if he or she wears safety belts.

T F

25. You should use the handrail when you get on and off the school bus.

T F

School_____

Teacher_____

Student Name_____

Fifth Grade Knowledge Test

Form E

1. Windows should be rolled down all the way to get enough air inside the car.

T F

2. A person should walk on the left side of the road, facing traffic.

T F

3. People usually do not have very good reasons for <u>not</u> wearing safety belts.

T F

4. Cracks in the pavement can throw a bicyclist off balance.

T F

5. When a car stops suddenly, all the people in the car stop at the same time the car does.

T F

6. The safest place for a baby to ride is in a special car seat.

T F

7. Safety belts should be worn low around the hips.

T F

8. Every person who walks from one place to another is called a pedestrian.

T F

E - Page 2

9. On long trips, it is better to let children sleep in the back of a station wagon.

T F

10. After getting out of the car, you should walk to the nearest intersection to cross the street.

T F

11. A bicyclist should use hand signals for turning, slowing down, and stopping.

T F

12. Putting too many things in a car to take on vacation is not safe.

T F

13. Bicyclists must obey traffic signs.

T F

14. The driver should let the people riding in the car decide whether they want to buckle up.

T F

15. In a crash, it is much better to be thrown out of the car than to stay in it.

T F

16. The older children should get on the school bus first.

T F

17. Of all the people killed each year in car accidents, more than 5,000 of these would be alive if everyone who rides in a car would always buckle up.

T F

18. It is more dangerous to get out of a car on the street side because of the passing traffic.

T F

19. The children on a school bus could cause the driver to have an accident.

T F

20. If you must stand on a school bus, you should hold onto the back of two seats.

T F

21. Other people may have to pay to take care of people who are injured from car crashes.

T F

22. You should get into a car from the side which is closest to you.

T F

23. It is a good idea to have safety belts available for everyone in the car.

T F

24. In a car accident, you are less likely to be hurt if you are wearing a safety belt.

T F

25. A person walking can put complete trust in the traffic light when deciding whether it is safe to cross the street.

T F

School_____

Teacher_____

Student Name_____

Fifth Grade Knowledge Test

Form F

1. Safety belts will keep you from being thrown around in the car if it stops suddenly.

T F

2. Children who weigh less than 40 pounds should wear lap belts when riding in a car.

T F

3. Safety belts can actually make driving less tiring.

T F

4. After getting out of a car, you should cross the street at once.

T F

5. At intersections you should ride the bike across the street.

T F

6. To be safe while riding in a car, you should keep your head, arms and legs inside the windows.

T F

7. The driver is responsible for the safety of all the people in the car.

T F

8. You should talk to the school bus driver to help keep him alert.

T F

F - Page 2

9. It is not safe to eat lollipops or popsicles while riding in a car.

T F

10. To be safe, a person walking depends a lot on how well he hears.

T F

11. If you are tall enough, you should wear the shoulder harness part of the safety belt because it will keep your upper body from hitting the dash board or windshield.

T F

12. Where there is no sidewalk, a person should walk on the left side of the road, facing traffic.

T F

13. People should be allowed to decide for themselves whether they should do something to keep him from being injured.

T F

14. A bicycle is a vehicle because it is a machine used for moving people.

T F

15. You should not walk towards the school bus while it is pulling up to the stop.

T F

16. In an emergency, the people in the seats nearest the door of the school bus should start out first.

T F

17. If you do not wear safety belts, you are much more likely to be killed or seriously injured in a car accident.

T F

18. To jaywalk means to cross the street at the intersection with white lines marking where to walk.

T F

19. If you are sitting next to the car door on the street side, you should move to the other side of the car before you get out.

T F

20. It is better to wear the safety belt real loose so you can move around more easily in your seat.

T F

21. In a moving car, people in the car move forward along with the car.

T F

22. One thing wrong with wearing safety belts is that they will keep you from getting out of a car that catches on fire.

T F

23. You do not need to wear safety belts when you are only riding around town.

T F

24. To signal a right turn, a bicyclist puts his left arm and hand straight out.

T F

25. It is a good habit to keep the doors locked while riding in a car.

T F

School_____

Teacher_____

Student Name_____

Third Grade Knowledge Test

Form AA

1. Windows should be rolled down all the way to get enough air inside the car.

T F

2. A person should walk on the left side of the road, facing traffic.

T F

3. People usually do not have very good reasons for <u>not</u> wearing safety belts.

T F

4. Cracks in the pavement can throw a bicyclist off balance.

T F

5. When a car stops suddenly, all the people in the car stop at the same time the car does.

T F

6. The safest place for a baby to ride is in a special car seat.

T F

7. Safety belts should be worn low around the hips.

T F

8. Every person who walks from one place to another is called a pedestrian.

T F

AA - Page 2

9. On long trips, it is better to let children sleep in the back of a station wagon.

T F

10. After getting out of the car, you should walk to the nearest intersection to cross the street.

T F

11. A bicyclist should use hand signals for turning, slowing down, and stopping.

T F

12. Putting too many things in a car to take on vacation is not safe.

T F

13. Bicyclists must obey traffic signs.

T F

14. The driver should let the people riding in the car decide whether they want to buckle up.

T F

15. The older children should get on the school bus first.

T F

16. The children on a school bus could cause the driver to have an accident.

T F

17. If you must stand on a school bus, you should hold onto the back of two seats.

T F

AA - Page 3

18. You should get into a car from the side which is closest to you.

T F

19. In a car accident, you are less likely to be hurt if you are wearing a a safety belt.

T F

20. A person walking can put complete trust in the traffic light when deciding whether it is safe to cross the street.

T F

21. Safety belts will keep you from being thrown around in the car if it stops suddenly.

T F

22. Children who weigh less than 40 pounds should wear lap belts when riding in a car.

T F

23. After getting out of a car, you should cross the street at once.

T F

24. At intersections you should ride the bike across the street.

T F

25. To be safe while riding in a car, you should keep your head, arms, and legs inside the windows.

T F

26. The driver is responsible for the safety of all the people in the car.

T F

27. You should talk to the school bus driver to help keep him alert.

T F

28. It is not safe to eat lollipops or popsicles while riding in a car.

T F

29. To be safe, a person walking depends a lot on how well he hears.

T F

30. When there is no sidewalk, a person should walk on the left side of the road, facing traffic.

T F

31. A bicycle is a vehicle because it is a machine used for moving people.

T F

32. You should not walk towards the school bus while it is pulling up to the stop.

T F

33. In an emergency, the people in the seats nearest the door of the school bus should start out first.

T F

34. To jaywalk means to cross the street at the intersection with white lines marking where to walk.

T F

35. It is better to wear the safety belt real loose so you can move around more easily in your seat.

T F

36. In a moving car, people in the car move forward along with the car.

T F

AA - Page 5

37. One thing wrong with wearing safety belts is that they will keep you from getting out of a car that catches on fire.

T F

38. You do not need to wear safety belts when you are only riding around town.

T F

39. To signal a right turn, a bicyclist puts his left arm and hand straight out.

T F

40. It is a good habit to keep the doors locked while riding in a car.

T F

School_____

Teacher_____

Student Name_____

Third Grade Knowledge Test

Form BB

1. If you must stand on the school bus, you should hold your books firmly in your arms.

T F

2. Safety belts can keep many people from getting killed or hurt in car accidents.

T F

3. The only time a person should walk on the road or in the street is to cross the street.

T F

4. When a car stops suddenly, people in the car stop moving after the car does.

T F

5. It is safe for parents to hold a baby in their arms while riding in a car.

T F

6. Fastening safety belts should be one of the things to do before driving off.

T F

7. People who are noisy in the car can bother the driver and may cause him to have an accident.

T F

8. It is best to cross the street only at intersections or crosswalks.

T F

9. When riding a bicycle, both hands should be on the handlebars except when giving a hand signal to turn.

T F

10. Babies should ride in their special seats turned backwards in the car.

T F

11. The shoulder harness part of the safety belt should be worn only when it does not come across the neck.

T F

12. A bicyclist should ride on the left side of the road facing traffic.

T F

13. The driver should let the people riding in the car decide whether they want to use safety belts, and not ask them to please wear the belts.

T F

14. A person wearing bright-colored clothing cannot be seen very well at night if he or she is walking.

T F

15. You should cross at least twelve feet in front of the school bus.

T F

16. Bicycles are harder to control than cars.

T F

BB - Page 3

17. After you get out of a car, it is better to walk in front of the car instead of behind it.

T F

18. Books should be put in the back of the car, in the rear window deck.

T F

19. Whenever you can, you should get out of a car on the side that is nearest the curb.

T F

20. You should use the handrail when you get on and off the school bus.

T F

21. Safety belts will keep you from being thrown around in the car if it stops suddenly.

T F

22. Children who weigh less than 40 pounds should wear lap belts when riding in a car.

T F

23. After getting out of a car, you should cross the street at once.

T F

24. At intersections you should ride the bike across the street.

T F

25. To be safe while riding in a car, you should keep your head, arms, and legs inside the windows.

T F

26. The driver is responsible for the safety of all the people in the car.

T F

27. You should talk to the school bus driver to help keep him alert.

T F

28. It is not safe to eat lollipops or popsicles while riding in a car.

T F

29. To be safe, a person walking depends a lot on how well he hears.

T F

30. When there is no sidewalk, a person should walk on the left side of the road, facing traffic.

T F

31. A bicycle is a vehicle because it is a machine used for moving people.

T F

32. You should not walk towards the school bus while it is pulling up to the stop.

T F

33. In an emergency, the people in the seats nearest the door of the school bus should start out first.

T F

34. To jaywalk means to cross the street at the intersection with white lines marking where to walk.

T F

BB - Page 5

35. It is better to wear the safety belt real loose so you can move around more easily in your seat.

T F

36. In a moving car, people in the car move forward along with the car.

T F

37. One thing wrong with wearing safety belts is that they will keep you from getting out of a car that catches on fire.

T F

38. You do not need to wear safety belts when you are only riding around town.

T F

39. To signal a right turn, a bicyclist puts his left arm and hand straight out.

T F

40. It is a good habit to keep the doors locked while riding in a car.

T F

School_____

Teacher_____

Student Name_____

Third Grade Knowledge Test

Form CC

1. If you must stand on the school bus, you should hold your books firmly in your arms.

T F

2. Safety belts can keep many people from getting killed or hurt in car accidents.

T F

3. The only time a person should walk on the road or in the street is to cross the street.

T F

4. When a car stops suddenly, people in the car stop moving after the car does.

T F

5. It is safe for parents to hold a baby in their arms while riding in a car.

T F

6. Fastening safety belts should be one of the things to do before driving off.

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7. People who are noisy in the car can bother the driver and may cause him to have an accident.

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CC - Page 2

8. It is best to cross the street only at intersections or crosswalks.

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9. When riding a bicycle, both hands should be on the handlebars except when giving a hand signal to turn.

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10. Babies should ride in their special seats turned backwards in the car.

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11. The shoulder harness part of the safety belt should be worn only when it does not come across the neck.

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12. A bicyclist should ride on the left side of the road facing traffic.

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13. The driver should let the people riding in the car decide whether they want to use safety belts, and not ask them to please wear the belts.

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14. A person wearing bright-colored clothing cannot be seen very well at night if he or she is walking.

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15. You should cross at least twelve feet in front of the school bus.

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16. Bicycles are harder to control than cars.

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CC - Page 3

17. After you get out of a car, it is better to walk in front of the car instead of behind it.

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18. Books should be put in the back of the car, in the rear window deck.

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19. Whenever you can, you should get out of a car on the side that is nearest the curb.

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20. You should use the handrail when you get on and off the school bus.

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21. Windows should be rolled down all the way to get enough air inside the car.

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22. A person should walk on the left side of the road, facing traffic.

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23. People usually do not have very good reasons for not wearing safety belts.

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24. Cracks in the pavement can throw a bicyclist off balance.

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25. When a car stops suddenly, all the people in the car stop at the same time the car does.

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26. The safest place for a baby to ride is in a special car seat.

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CC - Page 4

27. Safety belts should be worn low around the hips.

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28. Every person who walks from one place to another is called a pedestrian.

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29. On long trips, it is better to let children sleep in the back of a station wagon.

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30. After getting out of the car, you should walk to the nearest intersection to cross the street.

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31. A bicyclist should use hand signals for turning, slowing down, and stopping.

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32. Putting too many things in a car to take on vacation is not safe.

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33. Bicyclists must obey traffic signs.

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34. The driver should let the people riding in the car decide whether they want to buckle up.

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35. The older children should get on the school bus first.

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36. The children on a school bus could cause the driver to have an accident.

T F

37. If you must stand on a school bus, you should hold onto the back of two seats.

T F

38. You should get into a car from the side which is closest to you.

T F

39. In a car accident, you are less likely to be hurt if you are wearing a a safety belt.

T F

40. A person walking can put complete trust in the traffic light when deciding whether it is safe to cross the street.

T F

School_____

Teacher_____

Student Name_____

Fifth Grade Knowledge Test

Form DD

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2. A person should walk on the left side of the road, facing traffic.

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3. People usually do not have very good reasons for <u>not</u> wearing safety belts.

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24. In a car accident, you are less likely to be hurt if you are wearing a safety belt.

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25. A person walking can put complete trust in the traffic light when deciding whether it is safe to cross the street.

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26. Safety belts will keep you from being thrown around in the car if it stops suddenly.

T F

27. Children who weigh less than 40 pounds should wear lap belts when riding in a car.

T F

28. Safety belts can actually make driving less tiring.

T F

29. After getting out of a car, you should cross the street at once.

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30. At intersections you should ride the bike across the street.

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31. To be safe while riding in a car, you should keep your head, arms and legs inside the windows.

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32. The driver is responsible for the safety of all the people in the car.

T F

33. You should talk to the school bus driver to help keep him alert.

T F

34. It is not safe to eat lollipops or popsicles while riding in a car.

T F

35. To be safe, a person walking depends a lot on how well he hears.

T F

DD - Page 5

36. If you are tall enough, you should wear the shoulder harness part of the safety belt because it will keep your upper body from hitting the dash board or windshield.

T F

37. Where there is no sidewalk, a person should walk on the left side of the road, facing traffic.

T F

38. People should be allowed to decide for themselves whether they should do something to keep him from being injured.

T F

39. A bicycle is a vehicle because it is a machine used for moving people.

T F

40. You should not walk towards the schcol bus while it is pulling up to the stop.

T F

41. In an emergency, the people in the seats nearest the door of the school bus should start out first.

T F

42. If you do not wear safety belts, you are much more likely to be killed or seriously injured in a car accident.

T F

43. To jaywalk means to cross the street at the intersection with white lines marking where to walk.

T F

44. If you are sitting next to the car door on the street side, you should move to the other side of the car before you get out.

T F

45. It is better to wear the safety belt real loose so you can move around more easily in your seat.

T F

46. In a moving car, people in the car move forward along with the car.

T F

47. One thing wrong with wearing safety belts is that they will keep you from getting out of a car that catches on fire.

T F

48. You do not need to wear safety belts when you are only riding around town.

T F

49. To signal a right turn, a bicyclist puts his left arm and hand straight out.

T F

50. It is a good habit to keep the doors locked while riding in a car.

T F

School_____

Teacher_____

Student Name_____

Fifth Grade Knowledge Test

Form EE

1. If you must stand on the school bus, you should hold your books firmly in your arms.

T F

2. Safety belts can keep many people from getting killed or hurt in car accidents.

T F

3. Lap belts should fit snugly across the stomach.

T F

4. The only time a person should walk on the road or in the street is to cross the street.

T F

5. Government never has any right to tell people what to do with their own lives.

T F

6. When a car stops suddenly, people in the car stop moving after the car does.

T F

7. It is safe for parents to hold a baby in their arms while riding in a car.

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APPENDIX L

CODING FORM AND RULES FOR SEAT BELT OBSERVATIONS

BLANK

DATE: _____ - 215 OBSERVER: _____

START TIME: _____ SCHOOL: _____

STOP TIME: _____ SESSION: _____

	B N U	B N U
B N U	B N U	B N U

	B N U	B N U
B N U	B N U	B N U

	B N U	B N U
B N U	B N U	B N U

	B N U	B N U
B N U	B N U	B N U

	B N U	B N U
B N U	B N U	B N U

	B N U	B N U
B N U	B N U	B N U

	B N U	B N U
B N U	B N U	B N U

	B N U	B N U
B N U	B N U	B N U

	B N U	B N U
B N U	B N U	B N U

	B N U	B N U
B N U	B N U	B N U

	B N U	B N U
B N U	B N U	B N U

	B N U	B N U
B N U	B N U	B N U

	B N U	B N U
B N U	B N U	B N U

	B N U	B N U
B N U	B N U	B N U

	B N U	B N U
B N U	B N U	B N U

	B N U	B N U
B N U	B N U	B N U

	B N U	B N U
B N U	B N U	B N U

CODES

Belt Usage

B - belt used

N - belt not used

U - unable to determine

A - adult or nonelementary child in seat position

X - no seat position

0 - no occupant in that seat position

Race of Driver

W - white

O - other race

U - unable to determine

A - adult or nonelementary child in seat position

X - no seat position

0 - no occupant in that seat position

Race of Passengers

Code only if different from the driver's race.

Crowding

Code "C" if there is crowding, that is, more occupants than seat positions.

Code crowding for front and back separately.

CODING GUIDELINES

1. Write in driver race and belt codes in the empty box. Mark off the belt usage codes for passengers.

2. Code child(ren) first before driver.

3. Do not code adult passengers or nonelementary children. Just put "A" across box.

4. Do not code positions with no seats or belts, e.g. middle position between the two front bucket seats or the cargo area of a hatch back, or seats folded down. Put "X" in these positions. If a child is in that position, count that as crowding.

5. No need to distinguish the 2 vs 3 seaters in the back. If a child is in the middle and not belted, just code as "unbelted" in the center back position.

6. Consider as bucket seats only if the seats are separate seats.

7. List of exclusions:

   vans
   taxicabs

DATA ENTRY GUIDELINES

1. Input data according to the record format.

2. Enter race of passengers before each passenger belt usage codes. Obtain this from race of driver unless specified otherwise.

3. Be sure to enter the right number of blanks, Xs or As to account for the different events.

RECORD FORMAT

HEADER

START TIME

STOP TIME

SCHOOL

SESSION

DATA

1-3	case number
4	driver race
5	driver belt
6	center front race
7	center front belt
8	right front race
9	right front belt
10	left back race
11	left back belt
12	center back race
13	center back belt
14	right back race
15	right back belt
16	Front crowding
17	Back crowding

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